



In cooperation with the Colorado Agricultural Experiment Station, the High Plains Soil Conservation District, and the Prairie Soil Conservation District

# Soil Survey of Lincoln County, Colorado

Access to soil survey information is provided through maps. All text and tables relate to the map symbols and the areas delineated on these maps.

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http://offices.usda.gov/scripts/ndISAPI.dll/oip\_public/USA\_map



### **How To Use This Soil Survey**

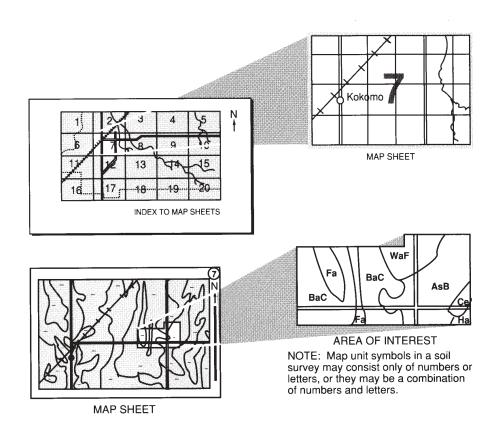
#### **Detailed Soil Maps**

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1999. Soil names and descriptions were approved in 2000. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1999. This survey was made cooperatively by the Natural Resources Conservation Service and the Colorado Agricultural Experiment Station. The survey is part of the technical assistance furnished to the High Plains Soil Conservation District and the Prairie Soil Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Cover: Cattle resting in an area of Deep Sands range site in Valent-Bijou complex, 1 to 12 percent slopes, in Lincoln County.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service homepage on the World Wide Web. The address is http://www.nrcs.usda.gov.

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#### **Foreword**

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information is available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Allen Green State Conservationist Natural Resources Conservation Service

## Soil Survey of Lincoln County, Colorado

By Laura Craven and Melissa Trenchik, Natural Resources Conservation Service

Fieldwork by Jim Borchert, Barb Cencich, Laura Craven, Doug Cryer, Hayes Dye, James Fuchs, Elmo Geib, William Hawn, Lee Neve, Kelly Pace, Mark Reichert, Walter Schaefer, and Randy Staples, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Colorado Agricultural Experiment Station, the High Plains Soil Conservation District, and the Prairie Soil Conservation District

LINCOLN COUNTY is located in the Great Plains section of eastern Colorado, including a part of the area known as the Arkansas Divide (fig. 1). It is a double rectangle in the shape of a backwards L and is 48 miles wide in the southern part and 30 miles wide in the northern part. It has an area of 1,655,100 acres, or 2,586 square miles. In 2000, the population of Lincoln County was about 6,183. Hugo, the county seat, had a population of 885. Limon, the largest town in Lincoln County, had a population of 2,167 (Colorado Department of Local Affairs, 2000).

#### **General Nature of the County**

The following paragraphs give general information about Lincoln County. They describe history and development; natural resources; physiography, drainage, and relief; geology; and climate.

#### **History and Development**

Much of the present area of Lincoln County lay within the Arapahoe-Cheyenne Reserve, established by the Boone-Culver Treaty in 1861. The treaty was never adhered to, and in 1867 the two tribes were moved to a reservation in Oklahoma. In the late 1800s, the cattle business was at its peak. Hugo was a major shipping point by rail to eastern markets. Lincoln County was organized on April 11, 1889, from parts of Bent and Elbert Counties and was named for Abraham Lincoln (Colorado Division of Local Government, 1985). In November 1889, Hugo, named for early pioneer



Figure 1.—Location of Lincoln County in Colorado.

Richard Hugo, was voted the county seat (Colorado Division of Local Government, 1985). Around the turn of the century, Lincoln County experienced its largest growth. The open range came to an end, and the Hugo Land Office filed a record number of homestead entries in the United States in March 1907. A highlight in the history of Hugo was the visit of President Theodore Roosevelt on May 4, 1903, while he was traveling by train on a campaign tour. The President was invited to stop for breakfast with local cowboys who were gathered for the spring round-up (Owen, 1967).

#### **Natural Resources**

Soil and native vegetation are the major natural resources in Lincoln County. About 64 percent of the county is rangeland, which is primarily used for cattle production. About 23 percent of the county is nonirrigated cropland. Wheat and feed (millet and sorghum) are the main crops.

Sand, gravel, oil, gas, and wildlife are other natural resources in the county. Poorly graded sand and gravel of usable quality are extracted from drainage beds or pits in the Ogallala Formation. The sand and gravel are used mainly for road surfacing. Oil and gas production is limited to relatively small fields. The principal game animals are mule deer and pronghorn.

#### Physiography, Drainage, and Relief

Elevation in the survey area ranges from about 4,420 feet above sea level in the southeast, near the East Fork Adobe Creek, to about 5,960 feet above sea level in the southwest, north of Steels Fork.

Lincoln County is part of the High Plains section of the Great Plains. In the northern part of the county, the North Fork and South Fork of the Arikaree River, the Arikaree River, Hell Creek, and the South Fork of the Republican River flow to the northeast. In the northern part of the county, a divide crossing diagonally from the northwest to the southeast separates the Arikaree River and Big Sandy Creek watersheds. Big Sandy Creek, Long Branch Creek, Rush Creek, Little Horse Creek, Horse Creek, Adobe Creek, Steels Fork, and Pond Creek are south of the divide and drain to the southeast.

#### Geology

The Pierre Shale, Ogallala, and Peoria Loess Formations influence the soils in the survey area. Many Pleistocene and Holocene alluvium and eolian deposits also influence the soil formation in the county.

The Pierre Shale Formation consists of sediments deposited in a shallow inland sea during Upper Cretaceous time. It is gray, clayey shale. Midway and Razor soils formed in material from the Pierre Shale Formation.

The Ogallala Formation consists of sediments deposited by streams flowing from the Rocky Mountains during Upper Miocene time. It is poorly sorted, loose to well-cemented sand and gravel. Karval and Canyon soils formed in material from the Ogallala Formation.

The Peoria Loess Formation consists of windblown silt deposited during Pleistocene time. Colby, Bacid,

Wiley, and Wilid soils formed in material from the Peoria Loess Formation.

Many recent alluvium and eolian formations were deposited during the Pleistocene and Holocene time periods. These formations consist of silt, sand, and gravel (United States Department of the Interior, 1976, 1978, 1979, and 1980).

#### Climate

Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from the First Order station in Pueblo, Colorado.

Table 1 gives data on temperature and precipitation for the survey area, as recorded at Genoa in the period 1961 to 1990. Table 2 gives data on temperature and precipitation for the survey area, as recorded at Karval in the period 1961 to 1990. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 29.2 degrees F and the average daily minimum temperature is 14.6 degrees. The lowest temperature on record, which occurred at Genoa on December 22, 1990, was -29 degrees. In summer, the average temperature is 70.6 degrees and the average daily maximum temperature is 86.4 degrees. The highest temperature, which occurred at Genoa on July 3, 1969, was 104 degrees.

The average annual precipitation is about 15.86 inches. Of this, about 11.50 inches, or 72 percent, usually falls in May through September. The growing season for most crops falls within this period. Thunderstorms occur on about 40 days each year, and most occur between May and August.

The average seasonal snowfall is 29.6 inches. The greatest snow depth at any one time during the period of record was 15 inches recorded on November 20, 1975. On the average, 33 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was on November 27, 1983.

The average relative humidity in midafternoon is about 37 percent. Humidity is higher at night, and the average at dawn is about 68 percent. The sun shines 79 percent of the time possible in summer and 73 percent in winter. The prevailing wind is from the south. Average windspeed is highest, around 10 miles per hour, from March to May.

#### **How This Survey Was Made**

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the

same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

A few areas in Lincoln County were not mapped because the landowners did not give permission for access. These areas are indicated as access denied areas on the detailed soil maps by the symbol 220.

The Major Land Resource Area concept was one model used during the mapping of Lincoln County. Major Land Resource Areas (MLRAs) are geographically associated land resource units (USDA, 1981). Identification of these areas is important in resource planning. MLRAs are characterized by a particular pattern of soils, climate, water resources, and land uses. Two MLRAs In Lincoln County are the Central High Plains Major Land Resource Area (MLRA 67) and the Upper Arkansas Valley Rolling Plains Major Land Resource Area (MLRA 69). The MLRAs differ in climate and crop yields. Soils in MLRA 69 are

drier, with a precipitation range from 11 to 14 inches, and generally have lower crop yields than those of the soils in MLRA 67, which has a precipitation range from 14 to 16 inches. Some soils that have severe limitations, such as low permeability, shallow bedrock, or a high sodium adsorption ratio, are mapped in both MLRAs. These properties are more limiting than the climate. Also, some soils that have a thick, dark surface are mapped in both MLRAs. These soils have a soil classification that allows an aridic or ustic

moisture regime. A soil with "moist" in the map unit name is mapped in MLRA 67. A soil with "dry" in the map unit name is mapped in MLRA 69.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey area.

### **Detailed Soil Map Units**

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and

miscellaneous areas on the landscape. A few of the minor components listed in the map unit descriptions are not described elsewhere in this survey. Information regarding these soils is available in the local office of the Natural Resources Conservation Service or can be accessed through the "Official Series Descriptions" link on the USDA-NRCS Soil Survey Division Webpage.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Apishapa clay loam, 0 to 3 percent slopes, rarely ponded, is a phase of the Apishapa series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of

the soils or miscellaneous areas are somewhat similar in all areas. Ascalon-Haxton complex, dry, 0 to 3 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Gravel pits is an example.

In the descriptions, "LEP" means linear extensibility percent.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

### 101—Apishapa clay loam, 0 to 3 percent slopes, rarely ponded

#### Map Unit Composition

Apishapa and similar soils: 90 percent Minor components: 10 percent

#### **Component Descriptions**

#### **Apishapa**

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains Landform: Depressions Parent material: Alluvium Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Slowest permeability class: Slow

Available water capacity: High (about 10.7 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: At the surface

Ponding frequency: Rare Runoff class: Medium Ecological site: Plains Swale Land capability (nonirrigated): 4w

Typical profile:

Ap—0 to 8 inches; clay loam C—8 to 60 inches; silty clay

#### Minor components

Rago and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Overflow

Satanta and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

### 102—Arvada clay loam, 0 to 5 percent slopes

#### **Map Unit Composition**

Arvada and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Arvada

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains

Landform: Drainageways and fans

Parent material: Alluvium Slope: 0 to 5 percent

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: High (about 9.1 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Salt Flat

Land capability (nonirrigated): 7s

Typical profile:

A—0 to 4 inches; clay loam Btn—4 to 25 inches; clay Bkn—25 to 44 inches; clay

Bkny-44 to 60 inches; clay loam

#### Minor components

Razor and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

Vonid and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Manzanola and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Alkaline Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

### 103—Ascalon sandy loam, 1 to 3 percent slopes

#### Map Unit Composition

Ascalon and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Ascalon

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3c

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### Minor components

Haxtun and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Olnest and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Pleasant and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

### 104—Ascalon sandy loam, 3 to 5 percent slopes

#### **Map Unit Composition**

Ascalon and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Ascalon

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### Minor components

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

### 105—Ascalon sandy loam, 5 to 9 percent slopes

#### Map Unit Composition

Ascalon and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Ascalon

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 9 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### **Minor components**

Otero and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

### 106—Ascalon sandy loam, dry, 1 to 3 percent slopes

#### **Map Unit Composition**

Ascalon and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Ascalon

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Olney and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### Additional feature

Blowouts occur in areas of this map unit.

### 107—Ascalon sandy loam, dry, 3 to 5 percent slopes

#### Map Unit Composition

Ascalon and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Ascalon

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

108—Ascalon sandy loam, dry, 5 to 9

### percent slopes

#### Map Unit Composition

Ascalon and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Ascalon

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 9 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### **Minor components**

Olney and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Oterodry and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 9 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

### 109—Ascalon-Haxtun complex, 0 to 3 percent slopes

#### Map Unit Composition

Ascalon and similar soils: 55 percent Haxtun and similar soils: 30 percent Minor components: 15 percent

#### Component Descriptions

#### Ascalon

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3c

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### Haxtun

MLRA: 67—Central High Plains

Landform: Drainageways

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 4 inches; loamy sand BA—4 to 17 inches; sandy loam Bt—17 to 44 inches; sandy clay loam Btkb—44 to 60 inches; silt loam

#### **Minor components**

Olnest and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

### 110—Ascalon-Haxtun complex, dry, 0 to 3 percent slopes

#### Map Unit Composition

Ascalon and similar soils: 55 percent Haxtun and similar soils: 30 percent Minor components: 15 percent

#### **Component Descriptions**

#### Ascalon

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### Haxtun

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Drainageways

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 4 inches; loamy sand BA—4 to 17 inches; sandy loam Bt—17 to 44 inches; sandy clay loam Btkb—44 to 60 inches; silt loam

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Vonid and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

#### Additional feature

· Blowouts occur in areas of this map unit.

### 111—Bacid silt loam, 0 to 2 percent slopes

#### Map Unit Composition

Bacid and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### **Bacid**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains
Parent material: Loess
Slope: 0 to 2 percent

Drainage class: Well drained Slowest permeability class: Slow

Available water capacity: High (about 10.7

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 4 inches; silt loam
Bt—4 to 11 inches; silty clay loam
Btk—11 to 21 inches; silty clay
Bk—21 to 60 inches; silty clay loam

#### **Minor components**

Campo and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Loamy Plains

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Weld and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Loamy Plains

Arvada and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Wilid and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

### 112—Bankard-Glenberg complex, 0 to 3 percent slopes, occasionally flooded

#### Map Unit Composition

Bankard and similar soils: 55 percent Glenberg and similar soils: 30 percent Minor components: 15 percent

#### Component Descriptions

#### **Bankard**

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains
Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent

Drainage class: Somewhat excessively drained

Slowest permeability class: Rapid

Available water capacity: Low (about 3.6 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Occasional

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very low

Ecological site: Sandy Bottom Land Land capability (nonirrigated): 6s

Typical profile:

A—0 to 5 inches; loamy sand Bk—5 to 60 inches; loamy sand

#### **Glenberg**

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains
Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately rapid Available water capacity: Low (about 5.8 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Occasional

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very low

Ecological site: Sandy Bottom Land Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 3 inches; fine sandy loam Bk1—3 to 32 inches; fine sandy loam Bk2—32 to 60 inches; loamy sand

#### Minor components

Haverson and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Overflow

Karval and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 7 percent

Drainage class: Excessively drained

Ecological site: Gravel Breaks

Orsa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat excessively drained

Seldom and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Salt Meadow

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

### 113—Bijou loamy sand, 1 to 3 percent slopes

#### Map Unit Composition

Bijou and similar soils: 90 percent Minor components: 10 percent

#### **Component Descriptions**

#### Bijou

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 1 to 3 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Low (about 5.5 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 4 inches; loamy sand AB—4 to 9 inches; loamy sand Bt—9 to 36 inches; sandy loam C—36 to 60 inches; loamy sand

#### **Minor components**

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Valent and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

### 114—Bijou loamy sand, moist, 1 to 3 percent slopes

#### Map Unit Composition

Bijou and similar soils: 90 percent Minor components: 10 percent

#### Component Descriptions

#### Bijou

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 1 to 3 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Low (about 5.5 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

A—0 to 4 inches; loamy sand AB—4 to 9 inches; loamy sand Bt—9 to 36 inches; sandy loam C—36 to 60 inches; loamy sand

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Valent and similar soils

Extent: About 2 percent of the unit

Slope: 3 to 10 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

#### **Additional feature**

• Blowouts occur in areas of this map unit.

### 115—Bijou loamy sand, moist, 3 to 12 percent slopes

#### Map Unit Composition

Bijou and similar soils: 90 percent Minor components: 10 percent

#### Component Descriptions

#### Bijou

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 12 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Low (about 5.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; loamy sand AB—4 to 9 inches; loamy sand Bt—9 to 36 inches; sandy loam C—36 to 60 inches; loamy sand

#### Minor components

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 9 percent

Drainage class: Well drained Ecological site: Sandy Plains

Haxtun and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

### 116—Blakeland loamy sand, 3 to 12 percent slopes

#### Map Unit Composition

Blakeland and similar soils: 85 percent

Minor components: 15 percent

#### **Component Descriptions**

#### Blakeland

MLRA: 67—Central High Plains

Landform: Dunes

Parent material: Eolian deposits

Slope: 3 to 12 percent

Drainage class: Somewhat excessively drained

Slowest permeability class: Rapid

Available water capacity: Low (about 4.1 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very low Ecological site: Deep Sands Land capability (nonirrigated): 6e

Typical profile:

A—0 to 12 inches; loamy sand C—12 to 60 inches; loamy sand

#### Minor components

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 9 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 4 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Truckton and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Well drained Ecological site: Sandy Plains

### 117—Bresser sandy loam, 1 to 5 percent slopes

#### Map Unit Composition

Bresser and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### **Bresser**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Low (about 4.7 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 3 inches; sandy loam
Bt—3 to 13 inches; sandy clay loam
C—13 to 60 inches; loamy coarse sand

#### **Minor components**

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Haxtun and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Oterodry and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Truckton and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

### 118—Campo silt loam, 0 to 2 percent slopes

#### **Map Unit Composition**

Campo and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Campo

MLRA: 69—Upper Arkansas Valley Rolling

**Plains** 

Landform: Plains
Parent material: Loess
Slope: 0 to 2 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.2

inches)

Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 3 inches; silt loam Bt—3 to 15 inches; silty clay Bk—15 to 60 inches; silt loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Bacid and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Loamy Plains

### 119—Canyon-Rock outcrop complex, 5 to 60 percent slopes

#### Map Unit Composition

Canyon and similar soils: 55 percent

Rock outcrop: 35 percent Minor components: 10 percent

#### **Component Descriptions**

#### Canyon

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from

calcareous sandstone Slope: 5 to 60 percent

Depth to restrictive feature: 10 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Very low (about

1.4 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: High

Ecological site: Limestone Breaks Land capability (nonirrigated): 7s

Typical profile:

A—0 to 3 inches; gravelly loam AC—3 to 10 inches; loam

Cr—10 to 14 inches; gravelly weathered

bedrock

#### **Rock outcrop**

MLRA: 67—Central High Plains

Landform: Escarpments

Parent material: Calcareous sandstone

Slope: 5 to 60 percent Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Land capability (nonirrigated): 8s

#### Minor components

Eckley and similar soils

Extent: About 10 percent of the unit

Slope: 4 to 20 percent Drainage class: Well drained

### 120—Colby silt loam, 1 to 3 percent slopes

#### Map Unit Composition

Colby and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Colby

MLRA: 67—Central High Plains

Landform: Plains
Parent material: Loess
Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate Available water capacity: High (about 10.6

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 5 inches; silt loam Bk—5 to 60 inches; silt loam

#### Minor components

Keith and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Weld and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Loamy Plains

Wilev and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### 121—Colby silt loam, 3 to 12 percent slopes

#### Map Unit Composition

Colby and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Colby

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Loess Slope: 3 to 12 percent Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: High (about 10.6 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Loamy Slopes Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 5 inches; silt loam Bk-5 to 60 inches; silt loam

#### Minor components

Keith and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Kimst and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 12 percent Drainage class: Well drained Ecological site: Loamy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

#### 122—Colby-Weld silt loams, 1 to 5 percent slopes

#### Map Unit Composition

Colby and similar soils: 50 percent Weld and similar soils: 40 percent Minor components: 10 percent

#### **Component Descriptions**

#### Colby

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Loess Slope: 1 to 5 percent Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: High (about 10.6 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4e

Typical profile:

Ap—0 to 5 inches; silt loam Bk-5 to 60 inches; silt loam

#### Weld

MLRA: 67—Central High Plains

Landform: Hills Parent material: Loess Slope: 1 to 5 percent Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: High (about 10.9 inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Loamy Plains Land capability (nonirrigated): 3c

Typical profile:

A—0 to 4 inches; silt loam Bt—4 to 19 inches; silty clay

Btk—19 to 44 inches; silty clay loam

Bk—44 to 60 inches; silt loam

#### **Minor components**

Keith and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

### 123—Firstview loamy sand, 0 to 3 percent slopes

#### Map Unit Composition

Firstview and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### **Firstview**

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains

Landform: Drainageways and fans

Parent material: Alluvium Slope: 0 to 3 percent

Drainage class: Well drained Slowest permeability class: Slow

Available water capacity: Moderate (about 7.9

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Sandy Salt Flat Land capability (nonirrigated): 7s

Typical profile:

E—0 to 4 inches; loamy sand

Btkn1—4 to 20 inches; sandy clay loam

Btkn2—20 to 35 inches; clay Bk—35 to 60 inches; loamy sand

#### Minor components

Olney and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Seldom and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Salt Meadow

Valent and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

Vonid and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

### 124—Fort Collins loam, 1 to 3 percent slopes

#### Map Unit Composition

Fort Collins and similar soils: 90 percent

Minor components: 10 percent

#### Component Descriptions

#### **Fort Collins**

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.3 inches) Shrink-swell potential: Low (about 1.5 LEP) Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 3c

Typical profile:

A—0 to 7 inches; loam Bt—7 to 13 inches; clay loam Bk1—13 to 30 inches; loam Bk2—30 to 60 inches; loam

#### **Minor components**

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

### 125—Fort Collins loam, 3 to 5 percent slopes

#### Map Unit Composition

Fort Collins and similar soils: 85 percent

Minor components: 15 percent

#### **Component Descriptions**

#### **Fort Collins**

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 3 to 5 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.3

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 7 inches; loam Bt—7 to 13 inches; clay loam Bk1—13 to 30 inches; loam Bk2—30 to 60 inches; loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Wiley and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

### 126—Fort Collins-Karval complex, 5 to 25 percent slopes

#### **Map Unit Composition**

Fort Collins and similar soils: 55 percent Karval and similar soils: 35 percent Minor components: 10 percent

#### **Component Descriptions**

#### **Fort Collins**

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 5 to 10 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.3 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

A-0 to 7 inches; loam

Bt—7 to 13 inches; clay loam Bk1—13 to 30 inches; loam Bk2—30 to 60 inches; loam

#### Karval

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium Slope: 10 to 25 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Very low (about 2.6 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Gravel Breaks Land capability (nonirrigated): 6e

Typical profile:

A—0 to 5 inches; gravelly loamy sand Bk—5 to 40 inches; gravelly coarse sand

C-40 to 60 inches; coarse sand

#### **Minor components**

Kimst and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 12 percent Drainage class: Well drained Ecological site: Loamy Plains

Vona and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

### 127—Fort Collins-Platner loams, 1 to 5 percent slopes

Map Unit Composition

Fort Collins and similar soils: 50 percent

Platner and similar soils: 35 percent Minor components: 15 percent

#### Component Descriptions

#### **Fort Collins**

MLRA: 67—Central High Plains

Landform: Plains

Hillslope position: Summit

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.3 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 7 inches; loam Bt—7 to 13 inches; clay loam Bk1—13 to 30 inches; loam Bk2—30 to 60 inches; loam

#### **Platner**

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Alluvium and/or eolian

deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.0 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6

feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 7 inches; loam
Bt—7 to 15 inches; clay loam
Bk1—15 to 40 inches; silty clay loam
Bk2—40 to 60 inches; clay loam

#### Minor components

Ascalon and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Colby and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

### 128—Fort Collins-Razor, moist, complex, 5 to 15 percent slopes

#### **Map Unit Composition**

Fort Collins and similar soils: 50 percent Razor and similar soils: 40 percent Minor components: 10 percent

#### Component Descriptions

#### **Fort Collins**

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 5 to 10 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.3

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 7 inches; loam Bt—7 to 13 inches; clay loam Bk1—13 to 30 inches; loam Bk2—30 to 60 inches; loam

#### Razor

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or residuum

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Low (about 4.7 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: High

Ecological site: Clayey Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 2 inches; clay loam Bw—2 to 21 inches; silty clay Bky—21 to 27 inches; silty clay

Cr—27 to 37 inches; weathered bedrock

#### Minor components

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Midway and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 20 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shaly Plains

Otero and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### 129—Fort loam, 1 to 3 percent slopes

#### Map Unit Composition

Fort and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### **Fort**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

A-0 to 2 inches; loam

AB—2 to 5 inches; sandy loam Btk—5 to 34 inches; clay loam Bk—34 to 60 inches; silty clay loam

#### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Wilid and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

#### 130—Fort loam, 3 to 5 percent slopes

#### **Map Unit Composition**

Fort and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### **Fort**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.4

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4e

#### Typical profile:

A—0 to 2 inches; loam

AB—2 to 5 inches; sandy loam Btk—5 to 34 inches; clay loam Bk—34 to 60 inches; silty clay loam

#### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Wilid and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

### 131—Fort-Karval complex, 5 to 25 percent slopes

#### Map Unit Composition

Fort and similar soils: 55 percent Karval and similar soils: 35 percent Minor components: 10 percent

#### **Component Descriptions**

#### **Fort**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 5 to 10 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: High

Ecological site: Loamy Plains Land capability (nonirrigated): 6e Typical profile:

A-0 to 2 inches; loam

AB—2 to 5 inches; sandy loam Btk—5 to 34 inches; clay loam Bk—34 to 60 inches; silty clay loam

#### Karval

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium Slope: 10 to 25 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Very low (about 2.6 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Gravel Breaks Land capability (nonirrigated): 6e

Typical profile:

A—0 to 5 inches; gravelly loamy sand Bk—5 to 40 inches; gravelly coarse sand

C-40 to 60 inches; sand

#### Minor components

Kim and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 12 percent Drainage class: Well drained Ecological site: Loamy Plains

Vonid and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

### 132—Fort-Razor complex, 5 to 15 percent slopes

#### **Map Unit Composition**

Fort and similar soils: 50 percent Razor and similar soils: 40 percent Minor components: 10 percent

#### **Component Descriptions**

#### **Fort**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian

deposits

Slope: 5 to 10 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.4

inches

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

A-0 to 2 inches; loam

AB—2 to 5 inches; sandy loam Btk—5 to 34 inches; clay loam Bk—34 to 60 inches; silty clay loam

#### Razor

MLRA: 69—Upper Arkansas Valley Rolling

Plains Landform: Hills

Parent material: Alluvium and/or residuum

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow Available water capacity: Low (about 4.7

inches)

Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater

than 6 feet Runoff class: High

Ecological site: Alkaline Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 2 inches; clay loam Bw—2 to 21 inches; silty clay Bky—21 to 27 inches; silty clay

Cr—27 to 37 inches; weathered bedrock

#### Minor components

Midway and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 40 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shaly Plains

Oterodry and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Apishapa and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

### 133—Haversid silt loam, 0 to 3 percent slopes, rarely flooded

#### **Map Unit Composition**

Haversid and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Haversid

MLRA: 69—Upper Arkansas Valley Rolling

**Plains** 

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Saline Overflow Land capability (nonirrigated): 6c

Typical profile:

A—0 to 14 inches; silt loam

Bn—14 to 60 inches; stratified loam to clay loam

#### Minor components

Bankard and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Bottom Land

Firstview and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent Drainage class: Well drained Ecological site: Sandy Salt Flat

Glenberg and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Bottom Land

Ecological site. Carray Bottom E

Seldom and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Salt Meadow

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

### 134—Haverson loam, 0 to 3 percent slopes, rarely flooded

#### Map Unit Composition

Haverson and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Haverson

MLRA: 67—Central High Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.6 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low Ecological site: Overflow

Land capability (nonirrigated): 3e

Typical profile:

A1—0 to 5 inches; loam A2—5 to 15 inches; clay loam C-15 to 60 inches; clay loam

#### Minor components

Bankard and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Bottom Land

Glenberg and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent Drainage class: Well drained

Ecological site: Sandy Bottom Land

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Sampson and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Overflow

#### **Additional feature**

 Some areas adjacent to streams have short steep slopes.

### 135—Haxtun loamy sand, 0 to 3 percent slopes

#### **Map Unit Composition**

Haxtun and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Haxtun

MLRA: 67—Central High Plains

Landform: Drainageways

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 4 inches; loamy sand BA—4 to 17 inches; sandy loam Bt—17 to 44 inches; sandy clay loam Btkyb—44 to 60 inches; silt loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Olnest and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

### 136—Haxtun loamy sand, dry, 0 to 3 percent slopes

#### Map Unit Composition

Haxtun and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### Haxtun

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Drainageways

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 4 inches; loamy sand BA—4 to 17 inches; sandy loam

Bt—17 to 44 inches; sandy clay loam Btkyb—44 to 60 inches; silt loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Olney and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

### 137—Haxtun, dry-Olney loamy sands, 0 to 3 percent slopes

#### **Map Unit Composition**

Haxtun and similar soils: 55 percent Olney and similar soils: 30 percent Minor components: 15 percent

#### Component Descriptions

#### Haxtun

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Drainageways

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 4 inches; loamy sand BA—4 to 17 inches; sandy loam Bt—17 to 44 inches; sandy clay loam Btkyb—44 to 60 inches; silt loam

### Olney

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 7.9

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 7 inches; loamy sand Bt—7 to 36 inches; sandy clay loam Bk1—36 to 46 inches; sandy clay loam Bk2—46 to 60 inches; sandy loam

### **Minor components**

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

# 138—Haxtun-Olnest loamy sands, 0 to 3 percent slopes

Map Unit Composition

Haxtun and similar soils: 55 percent

Olnest and similar soils: 30 percent Minor components: 15 percent

## **Component Descriptions**

#### Haxtun

MLRA: 67—Central High Plains

Landform: Drainageways

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 4 inches; loamy sand BA—4 to 17 inches; sandy loam Bt—17 to 44 inches; sandy clay loam Btkyb—44 to 60 inches; silt loam

#### Olnest

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 7.7

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 8 inches; loamy sand Bt—8 to 38 inches; sandy clay loam Bk—38 to 60 inches; loam

## Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Platner and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### **Additional feature**

Blowouts occur in areas of this map unit.

# 139—Keith silt loam, 1 to 3 percent slopes

## Map Unit Composition

Keith and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

#### Keith

MLRA: 67—Central High Plains

Landform: Plains
Parent material: Loess
Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.6 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 3e

Typical profile:

A-0 to 10 inches; silt loam

Btk—10 to 26 inches; silty clay loam Bk—26 to 60 inches: silt loam

#### Minor components

Platner and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Satanta and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Wiley and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

# 140—Keith silt loam, 3 to 10 percent slopes

## **Map Unit Composition**

Keith and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

#### Keith

MLRA: 67—Central High Plains

Landform: Hills
Parent material: Loess
Slope: 3 to 10 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.6 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 10 inches; silt loam

Btk—10 to 26 inches; silty clay loam Bk—26 to 60 inches; silt loam

#### Minor components

Pleasant and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Satanta and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Wiley and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 12 percent Drainage class: Well drained Ecological site: Loamy Plains

## 141—Kim loam, 1 to 3 percent slopes

## Map Unit Composition

Kim and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### Kim

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.4 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 4 inches; loam Bk1—4 to 38 inches; loam Bk2—38 to 60 inches; clay loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Olney and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

## 142—Kim loam, 3 to 12 percent slopes

## Map Unit Composition

Kim and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### Kim

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 3 to 12 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.4 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; loam Bk1—4 to 38 inches; loam Bk2—38 to 60 inches; clay loam

#### Minor components

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 12 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Olney and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Vonid and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

# 143—Kimst loam, 1 to 3 percent slopes

## Map Unit Composition

Kimst and similar soils: 90 percent Minor components: 10 percent

## Component Descriptions

### **Kimst**

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 5 inches; loam

Bk-5 to 60 inches; sandy clay loam

#### Minor components

Olnest and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

Vona and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

# 144—Kimst loam, 3 to 12 percent slopes

#### Map Unit Composition

Kimst and similar soils: 90 percent

Minor components: 10 percent

## Component Descriptions

#### **Kimst**

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 3 to 12 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap-0 to 5 inches; loam

Bk-5 to 60 inches; sandy clay loam

#### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 3 to 12 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Vona and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 145—Las Animas sandy loam, 0 to 3 percent slopes, occasionally flooded

## **Map Unit Composition**

Las Animas and similar soils: 85 percent

Minor components: 15 percent

## Component Descriptions

#### Las Animas

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains Landform: Flood plains Parent material: Alluvium Slope: 0 to 3 percent

Drainage class: Poorly drained

Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 7.1 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Occasional

Depth to seasonal zone of saturation: About 12 to 36

inches

Runoff class: Very low Ecological site: Salt Meadow Land capability (nonirrigated): 4w

Typical profile:

A-0 to 6 inches; sandy loam

Bg—6 to 10 inches; stratified loamy sand to sandy

loam to loam

Bkyg—10 to 60 inches; stratified loamy sand to

sandy loam to loam

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Bankard and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Bottom Land

Glenberg and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained

Ecological site: Sandy Bottom Land

Haversid and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained

Ecological site: Saline Overflow

Limon and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Salt Flat

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 146—Limon clay, 0 to 3 percent slopes, rarely flooded

#### Map Unit Composition

Limon and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Limon

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: High (about 9.9 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Salt Flat

Land capability (nonirrigated): 6s

Typical profile:

A—0 to 6 inches; clay By—6 to 60 inches; clay

#### Minor components

Arvada and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 5 percent
Drainage class: Well drained
Ecological site: Salt Flat

Haversid and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Saline Overflow

Heldt and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Clayey Plains

Apishapa and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

# 147—Limon clay, moist, 0 to 3 percent slopes, rarely flooded

# Map Unit Composition

Limon and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Limon

MLRA: 67—Central High Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent
Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: High (about 9.9

inches)

Shrink-swell potential: High (about 7.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater

than 6 feet
Runoff class: Medium
Ecological site: Salt Flat

Land capability (nonirrigated): 6s

Typical profile:

A—0 to 6 inches; clay By—6 to 60 inches; clay

## Minor components

Arvada and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 5 percent
Drainage class: Well drained
Ecological site: Salt Flat

Haverson and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Overflow

Heldt and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Clayey Plains

Manzanst and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Alkaline Plains

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

# 148—Manzanola clay loam, 1 to 5 percent slopes

## **Map Unit Composition**

Manzanola and similar soils: 85 percent

Minor components: 15 percent

# **Component Descriptions**

## Manzanola

MLRA: 69—Upper Arkansas Valley Rolling

**Plains** 

Landform: Drainageways and fans

Parent material: Alluvium Slope: 1 to 5 percent Drainage class: Well drained Slowest permeability class: Slow

Available water capacity: High (about 9.9 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Alkaline Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 5 inches; clay loam Bt—5 to 30 inches; clay loam Bk—30 to 60 inches; clay loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Fort and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 149—Manzanst clay loam, 0 to 3 percent slopes, rarely flooded

## Map Unit Composition

Manzanst and similar soils: 90 percent Minor components: 10 percent

#### Component Descriptions

#### Manzanst

MLRA: 67—Central High Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Very slow Available water capacity: High (about 10.7

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Overflow

Land capability (nonirrigated): 3e

Typical profile:

A—0 to 3 inches; clay loam Bt—3 to 37 inches; clay loam Bk—37 to 60 inches; silty clay loam

## Minor components

Nunn and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Razor and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 150—Manzanst clay loam, 1 to 5 percent slopes

# Map Unit Composition

Manzanst and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

## Manzanst

*MLRA:* 67—Central High Plains *Landform:* Drainageways and fans

Parent material: Alluvium Slope: 1 to 5 percent Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: High (about 10.7 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Alkaline Plains Land capability (nonirrigated): 3e

## Typical profile:

A—0 to 8 inches; clay loam Btk1—8 to 18 inches; clay loam Btk2—18 to 40 inches; silty clay loam By—40 to 60 inches; silty clay loam

#### Minor components

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Razor and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

## **Additional feature**

• Some areas adjacent to streams have short steep slopes.

# 151—Midway clay loam, 1 to 5 percent slopes

### **Map Unit Composition**

Midway and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Midway

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 1 to 5 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow Available water capacity: Very low (about 2.4

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

### Minor components

Fort and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Manzanola and similar soils

Extent: About 4 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Alkaline Plains

Razor and similar soils

Extent: About 4 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

Rock outcrop

Extent: About 3 percent of the unit

Slope: 5 to 40 percent

# 152—Midway clay loam, moist, 1 to 5 percent slopes

## **Map Unit Composition**

Midway and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

## Midway

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 1 to 5 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

## Minor components

Fort Collins and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 5 percent Drainage class: Well drained

Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Manzanst and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent Drainage class: Well drained Ecological site: Alkaline Plains

Razor and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

Rock outcrop

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

# 153—Midway-Razor clay loams, 5 to 15 percent slopes

### Map Unit Composition

Midway and similar soils: 55 percent Razor and similar soils: 30 percent Minor components: 15 percent

## **Component Descriptions**

### Midway

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 5 to 15 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

#### Razor

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or residuum

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Low (about 4.7 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: High

Ecological site: Alkaline Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 2 inches; clay loam Bw—2 to 21 inches; silty clay Bky—21 to 27 inches; silty clay

Cr—27 to 37 inches; weathered bedrock

#### Minor components

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Fort and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 4 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Rock outcrop

Extent: About 3 percent of the unit

Slope: 5 to 40 percent

# 154—Midway-Razor clay loams, moist, 5 to 15 percent slopes

## Map Unit Composition

Midway and similar soils: 55 percent Razor and similar soils: 30 percent Minor components: 15 percent

## Component Descriptions

#### Midway

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 5 to 15 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A-0 to 4 inches; clay loam By—4 to 15 inches; clay loam Cr—15 to 25 inches; weathered

bedrock

#### Razor

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or residuum

Slope: 5 to 15 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic) Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Low (about 4.7 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6

feet

Runoff class: High

Ecological site: Clayey Plains Land capability (nonirrigated): 6e

#### Typical profile:

A—0 to 2 inches; clay loam Bw-2 to 21 inches; silty clay Bky-21 to 27 inches; silty clay

Cr—27 to 37 inches; weathered bedrock

#### Minor components

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Fort Collins and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 4 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Rock outcrop

Extent: About 3 percent of the unit

Slope: 5 to 40 percent

# 155—Midway-Rock outcrop complex, 5 to 40 percent slopes

#### Map Unit Composition (fig. 2)

Midway and similar soils: 55 percent



Figure 2.—An area of Midway-Rock outcrop complex, 5 to 40 percent slopes.

Rock outcrop: 30 percent Minor components: 15 percent

## **Component Descriptions**

## **Midway**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 5 to 40 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater

than 6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loamBy—4 to 15 inches; clay loamCr—15 to 25 inches; weathered bedrock

#### Rock outcrop

MLRA: 69—Upper Arkansas Valley Rolling

**Plains** 

Landform: Escarpments
Parent material: Clayey shale

Slope: 5 to 40 percent Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Land capability (nonirrigated): 8s

## **Minor components**

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 5 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Manzanola and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Alkaline Plains

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

# 156—Midway-Rock outcrop complex, moist, 5 to 40 percent slopes

# Map Unit Composition

Midway and similar soils: 55 percent

Rock outcrop: 30 percent Minor components: 15 percent

## Component Descriptions

### Midway

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 5 to 40 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4

inches)

Shrink-swell potential: Moderate (about 4.5

LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

## Rock outcrop

MLRA: 67—Central High Plains

Landform: Escarpments
Parent material: Clayey shale

Slope: 5 to 40 percent Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Land capability (nonirrigated): 8s

#### **Minor components**

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent
Drainage class: Well drained
Ecological site: Loamy Plains

Karval and similar soils

Extent: About 5 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Razor and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

Terry and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 7 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Sandy Plains

# 157—Nunn clay loam, 3 to 5 percent slopes

## **Map Unit Composition**

Nunn and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Nunn

MLRA: 67—Central High Plains Landform: Fans and terraces Parent material: Alluvium Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.9 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 5 inches; clay loam Bt—5 to 19 inches; clay

Bk-19 to 60 inches; sandy loam

#### Minor components

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent Drainage class: Well drained Ecological site: Loamy Plains

Platner and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Wages and similar soils

Extent: About 5 percent of the unit

Slope: 2 to 6 percent

Drainage class: Well drained Ecological site: Loamy Plains

# 158—Nunn-Sampson, rarely flooded, complex, 0 to 3 percent slopes

### Map Unit Composition

Nunn and similar soils: 55 percent Sampson and similar soils: 30 percent Minor components: 15 percent

#### **Component Descriptions**

### Nunn

MLRA: 67—Central High Plains

Landform: Drainageways, fans, and terraces

Parent material: Alluvium

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.9

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater

than 6 feet
Runoff class: Medium
Ecological site: Loamy Plains
Land capability (nonirrigated): 3c

Typical profile:

Ap—0 to 5 inches; clay loam Bt—5 to 19 inches; clay

Bk—19 to 60 inches; sandy loam

### Sampson

MLRA: 67—Central High Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.5

inches

Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater

than 6 feet
Runoff class: Low
Ecological site: Overflow
Land capability (nonirrigated): 3c

Typical profile:

A—0 to 7 inches; loam Bt—7 to 36 inches; clay loam Bk—36 to 60 inches; loam

#### Minor components

Glenberg and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent Drainage class: Well drained

Ecological site: Sandy Bottom Land

Rago and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Overflow

Satanta and similar soils

Extent: About 4 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

# 159—Nunn-Sampson, rarely flooded, complex, dry, 0 to 3 percent slopes

## Map Unit Composition

Nunn and similar soils: 50 percent Sampson and similar soils: 35 percent Minor components: 15 percent

## **Component Descriptions**

#### Nunn

*MLRA:* 69—Upper Arkansas Valley Rolling Plains *Landform:* Drainageways, fans, and terraces

Parent material: Alluvium Slope: 0 to 3 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.9 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 5 inches; clay loam Bt—5 to 19 inches; clay

Bk-19 to 60 inches; sandy loam

#### Sampson

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.5 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Saline Overflow Land capability (nonirrigated): 4c

Typical profile:

A—0 to 7 inches; loam Bt—7 to 36 inches; clay loam Bk—36 to 60 inches; loam

#### Minor components

Glenberg and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent Drainage class: Well drained Ecological site: Sandy Bottom Land

Rago and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Overflow

Satanta and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

# 160—Olnest loamy sand, 1 to 5 percent slopes

#### **Map Unit Composition**

Olnest and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

## Olnest

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 7.7

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 8 inches; loamy sand

Bt—8 to 38 inches; sandy clay loam

Bk-38 to 60 inches; loam

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

#### **Additional feature**

Blowouts occur in areas of this map unit.

# 161—Olnest sandy loam, 1 to 3 percent slopes

# Map Unit Composition

Olnest and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### **Olnest**

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.1 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 8 inches; sandy loam Bt—8 to 38 inches; sandy clay loam

Bk-38 to 60 inches; loam

## Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Vona and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

# 162—Olnest sandy loam, 3 to 5 percent slopes

### **Map Unit Composition**

Olnest and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Olnest

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.1

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4e

Typical profile:

Ap—0 to 8 inches; sandy loam Bt—8 to 38 inches; sandy clay loam

Bk—38 to 60 inches; loam

Minor components

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Ascalon and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

# 163—Olnest sandy loam, 5 to 12 percent slopes

### Map Unit Composition

Olnest and similar soils: 90 percent Minor components: 10 percent

### **Component Descriptions**

#### Olnest

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 12 percent Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.1

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e Typical profile:

Ap—0 to 8 inches; sandy loam Bt—8 to 38 inches; sandy clay loam

Bk-38 to 60 inches; loam

Minor components

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Ascalon and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent Drainage class: Well drained Ecological site: Sandy Plains

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

# 164—Olney loamy sand, 1 to 5 percent slopes

## Map Unit Composition

Olney and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

### Olney

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 7.9 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet Runoff class: Low

Ecological site: Sandy Plains

Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 7 inches; loamy sand Bt—7 to 36 inches; sandy clay loam Bk1—36 to 46 inches; sandy clay loam Bk2—46 to 60 inches; sandy loam

### **Minor components**

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Vonid and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

#### **Additional feature**

· Blowouts occur in areas of this map unit.

# 165—Olney sandy loam, 1 to 3 percent slopes

#### **Map Unit Composition**

Olney and similar soils: 85 percent Minor components: 15 percent

### Component Descriptions

### Olney

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 7.5 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 4 inches; sandy loam

Bt—4 to 18 inches; sandy clay loam Bk1—18 to 31 inches; sandy loam Bk2—31 to 60 inches; loamy sand

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Vonid and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

#### Additional features

• Blowouts occur in areas of this map unit.

• Some areas adjacent to streams have short steep slopes.

# 166—Olney sandy loam, 3 to 5 percent slopes

## Map Unit Composition

Olney and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Olney

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 7.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 4 inches; sandy loam Bt—4 to 18 inches; sandy clay loam Bk1—18 to 31 inches; sandy loam Bk2—31 to 60 inches; loamy sand

### **Minor components**

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Vonid and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

# 167—Olney sandy loam, 5 to 12 percent slopes

#### Map Unit Composition

Olney and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### Olney

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 12 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 7.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; sandy loam Bt—4 to 18 inches; sandy clay loam Bk1—18 to 31 inches; sandy loam Bk2—31 to 60 inches; loamy sand

#### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 12 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Vonid and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 168—Olney-Midway complex, 3 to 12 percent slopes

## Map Unit Composition

Olney and similar soils: 55 percent Midway and similar soils: 30 percent Minor components: 15 percent

## Component Descriptions

#### Olney

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 12 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 7.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; sandy loam Bt—4 to 18 inches; sandy clay loam Bk1—18 to 31 inches; sandy loam Bk2—31 to 60 inches; loamy sand

#### **Midway**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 3 to 12 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

#### **Minor components**

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Razor and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

Vonid and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 169—Otero sandy loam, 1 to 5 percent slopes

#### Map Unit Composition

Otero and similar soils: 85 percent Minor components: 15 percent

### **Component Descriptions**

#### Otero

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 6.2 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4e

Typical profile:

Ap—0 to 13 inches; sandy loam Bk—13 to 60 inches; sandy loam

## Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Vona and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

#### Additional feature

• Blowouts occur in areas of this map unit.

# 170—Oterodry fine sandy loam, 1 to 5 percent slopes

## Map Unit Composition

Oterodry and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Oterodry

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 7.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 11 inches; fine sandy loam Bk—11 to 60 inches; fine sandy loam

#### **Minor components**

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent Drainage class: Well drained Ecological site: Loamy Plains

Vonid and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

# 171—Oterodry fine sandy loam, 5 to 9 percent slopes

### **Map Unit Composition**

Oterodry and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

## Oterodry

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 7.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 11 inches; fine sandy loam Bk—11 to 60 inches; fine sandy loam

### **Minor components**

Ascalon and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 9 percent

Drainage class: Well drained Ecological site: Sandy Plains

Olney and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

Valent and similar soils

Extent: About 2 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

Vonid and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

Blowouts occur in areas of this map unit.

## 172—Platner loam, 0 to 3 percent slopes

### Map Unit Composition

Platner and similar soils: 85 percent Minor components: 15 percent

#### **Component Descriptions**

#### **Platner**

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.0 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 3c

## Typical profile:

A—0 to 7 inches; loam

Bt—7 to 15 inches; clay loam

Bk1—15 to 40 inches; silty clay loam

Bk2-40 to 60 inches; clay loam

#### Minor components

Ascalon and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Fort Collins and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained

Ecological site: Gravel Breaks

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

# 173—Platner-Ascalon complex, 0 to 3 percent slopes

#### Map Unit Composition

Platner and similar soils: 50 percent Ascalon and similar soils: 35 percent Minor components: 15 percent

### Component Descriptions

#### Platner

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Alluvium and/or eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.0 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 3c

Typical profile:

A—0 to 7 inches; loam Bt—7 to 15 inches; clay loam

Bk1—15 to 40 inches; silty clay loam Bk2—40 to 60 inches; clay loam

#### **Ascalon**

MLRA: 67—Central High Plains

Landform: Plains

Parent material: Eolian deposits

Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 3c

Typical profile:

Ap—0 to 4 inches; sandy loam Bt—4 to 15 inches; sandy clay loam Bk—15 to 60 inches; fine sandy loam

#### **Minor components**

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Olnest and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

# 174—Pleasant loam, 0 to 1 percent slopes, rarely ponded

## **Map Unit Composition**

Pleasant and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### **Pleasant**

MLRA: 67—Central High Plains

Landform: Depressions
Parent material: Alluvium
Slope: 0 to 1 percent

Drainage class: Moderately well drained

Slowest permeability class: Slow

Available water capacity: High (about 10.6 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: At the

surface

Ponding frequency: Rare

Runoff class: Low

Ecological site: Plains Swale Land capability (nonirrigated): 4w

Typical profile:

A—0 to 2 inches; loam Bt—2 to 40 inches; clay

C-40 to 60 inches; silty clay loam

#### **Minor components**

Rago and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Overflow

Sampson and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Overflow

#### Additional feature

 Some areas adjacent to streams have short steep slopes.

# 175—Rago silt loam, 0 to 2 percent slopes, rarely flooded

## Map Unit Composition

Rago and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

### Rago

MLRA: 67—Central High Plains

Landform: Flood plains Parent material: Alluvium Slope: 0 to 2 percent

Drainage class: Well drained Slowest permeability class: Slow

Available water capacity: High (about 10.5

inches)

Shrink-swell potential: Moderate (about 4.5

LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Overflow

Land capability (nonirrigated): 3c

Typical profile:

Ap—0 to 10 inches; silt loam Btkb—10 to 47 inches; silty clay Bk—47 to 60 inches; silt loam

### Minor components

Keith and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well

drained

Ecological site: Plains Swale

#### **Additional feature**

• Some areas adjacent to streams have short steep slopes.

# 176—Rago silt loam, dry, 0 to 2 percent slopes, rarely flooded

## Map Unit Composition

Rago and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### Rago

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability class: Slow

Available water capacity: High (about 10.5 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Saline Overflow Land capability (nonirrigated): 4c

Typical profile:

Ap—0 to 10 inches; silt loam Btkb—10 to 47 inches; silty clay Bk—47 to 60 inches; silt loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Keith and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

### **Additional feature**

 Some areas adjacent to streams have short steep slopes.

# 177—Razor clay loam, 1 to 5 percent slopes

#### Map Unit Composition

Razor and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

#### Razor

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or residuum

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Low (about 4.5 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: High

Ecological site: Alkaline Plains Land capability (nonirrigated): 6s

Typical profile:

A—0 to 2 inches; clay loam Bw—2 to 15 inches; silty clay Bky—15 to 27 inches; silty clay

Cr—27 to 37 inches; weathered bedrock

#### Minor components

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Fort and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Midway and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shaly Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

# 178—Razor clay loam, moist, 1 to 5 percent slopes

## **Map Unit Composition**

Razor and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### Razor

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or residuum

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Low (about 4.5 inches) Shrink-swell potential: High (about 7.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: High

Ecological site: Clayey Plains Land capability (nonirrigated): 6s

Typical profile:

A—0 to 2 inches; clay loam Bw—2 to 15 inches; silty clay Bky—15 to 27 inches; silty clay

Cr—27 to 37 inches; weathered bedrock

#### Minor components

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Fort Collins and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent Drainage class: Well drained

Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Midway and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained Ecological site: Shaly Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

# 179—Sampson loam, 0 to 2 percent slopes, rarely flooded

#### **Map Unit Composition**

Sampson and similar soils: 90 percent Minor components: 10 percent

## Component Descriptions

#### Sampson

MLRA: 67—Central High Plains

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 2 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low Ecological site: Overflow

Land capability (nonirrigated): 3c

Typical profile:

A—0 to 7 inches; loam Bt—7 to 36 inches; clay loam Bk—36 to 60 inches; loam

#### **Minor components**

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Fort Collins and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

# 180—Sampson loam, dry, 0 to 2 percent slopes, rarely flooded

## **Map Unit Composition**

Sampson and similar soils: 90 percent Minor components: 10 percent

## Component Descriptions

#### Sampson

MLRA: 69—Upper Arkansas Valley Rolling

**Plains** 

Landform: Flood plains
Parent material: Alluvium
Slope: 0 to 2 percent
Drainage class: Well drained

Slowest permeability class: Moderately

slow

Available water capacity: High (about 10.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Saline Overflow Land capability (nonirrigated): 4c

#### Typical profile:

A—0 to 7 inches; loam Bt—7 to 36 inches; clay loam Bk—36 to 60 inches; loam

#### Minor components

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### Satanta and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

# 181—Satanta loam, 1 to 3 percent slopes

## Map Unit Composition

Satanta and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### Satanta

MLRA: 67—Central High Plains

Landform: Terraces

Parent material: Fine-loamy eolian deposits over

fine-loamy alluvium Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately

slow

Available water capacity: High (about 9.9

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 3c

Typical profile:

A—0 to 4 inches; loam Bt—4 to 19 inches; loam Bk1—19 to 28 inches; loam Bk2—28 to 60 inches; loam

#### **Minor components**

Pleasant and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well

drained

Ecological site: Plains Swale

Sampson and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Overflow

# 182—Satanta loam, dry, 1 to 3 percent slopes

## **Map Unit Composition**

Satanta and similar soils: 90 percent Minor components: 10 percent

## **Component Descriptions**

#### Satanta

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Terraces

Parent material: Fine-loamy eolian deposits over

fine-loamy alluvium Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 9.9 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 4 inches; loam Bt—4 to 19 inches; loam Bk1—19 to 28 inches; loam Bk2—28 to 60 inches; loam

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Oterodry and similar soils

Extent: About 2 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Sampson and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Overflow

# 183—Seldom sandy loam, 0 to 3 percent slopes, rarely flooded

## **Map Unit Composition**

Seldom and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

#### Seldom

MLRA: 67—Central High Plains; 69—Upper

Arkansas Valley Rolling Plains

Landform: Flood plains Parent material: Alluvium Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained Slowest permeability class: Moderately slow Available water capacity: Moderate (about 7.4

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: About 6 to 24

inches
Runoff class: Low

Ecological site: Salt Meadow Land capability (nonirrigated): 3e

Typical profile:

A1—0 to 7 inches; sandy loam A2—7 to 15 inches; sandy loam Bkg1—15 to 42 inches; sandy loam

Bkg2—42 to 60 inches; stratified sandy loam to

sandy clay loam

### Minor components

Bankard and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Bottom Land

Firstview and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Salt Flat

Haversid and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Saline Overflow

Las Animas and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Drainage class: Poorly drained Ecological site: Salt Meadow

#### **Additional feature**

 Some areas adjacent to streams have short steep slopes.

# 184—Shingle-Midway complex, 1 to 9 percent slopes

## Map Unit Composition

Shingle and similar soils: 55 percent Midway and similar soils: 30 percent Minor components: 15 percent

### **Component Descriptions**

## **Shingle**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum Slope: 1 to 9 percent

Depth to restrictive feature: 10 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Very low (about 2.7 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 4 inches; silty clay loam Bk—4 to 15 inches; silty clay loam Cr—15 to 25 inches; weathered bedrock

#### Midway

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 1 to 9 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

## **Minor components**

Manzanola and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Alkaline Plains

Wilid and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

# 185—Shingle-Midway complex, moist, 1 to 9 percent slopes

## Map Unit Composition

Shingle and similar soils: 55 percent Midway and similar soils: 30 percent Minor components: 15 percent

### Component Descriptions

### Shingle

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum

Slope: 1 to 9 percent

Depth to restrictive feature: 10 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Very low (about 2.7 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 4 inches; silty clay loam Bk—4 to 15 inches; silty clay loam Cr—15 to 25 inches; weathered bedrock

## Midway

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 1 to 9 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

#### Minor components

Manzanst and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Alkaline Plains

Wiley and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 12 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

# 186—Sundance loamy sand, 1 to 3 percent slopes

### Map Unit Composition

Sundance and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### **Sundance**

MLRA: 67—Central High Plains; 69—Upper

Arkansas Valley Rolling Plains

Landform: Plains

Parent material: Eolian deposits over loess

Slope: 1 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than 6

feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 4e

Typical profile:

Ap—0 to 8 inches; loamy sand Bt—8 to 17 inches; sandy loam 2Bt—17 to 28 inches; clay loam 2C—28 to 84 inches; silt loam

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Valent and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

Vonid and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

# 187—Table Mountain loam, 0 to 2 percent slopes, rarely flooded

## Map Unit Composition

Table Mountain and similar soils: 85 percent

Minor components: 15 percent

## **Component Descriptions**

#### **Table Mountain**

MLRA: 67—Central High Plains

Landform: Flood plains Parent material: Alluvium Slope: 0 to 2 percent

Drainage class: Well drained

Slowest permeability class: Moderate

Available water capacity: High (about 9.6 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding frequency: Rare

Depth to seasonal zone of saturation: Greater than

6 feet Runoff class: Low Ecological site: Overflow

Land capability (nonirrigated): 3c

Typical profile:

Ap—0 to 6 inches; loam Bw—6 to 29 inches; clay loam BC—29 to 60 inches; loam

#### Minor components

Sampson and similar soils

Extent: About 10 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Overflow

Orsa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat excessively drained

#### Additional feature

• Some areas adjacent to streams have short steep slopes.

# 188—Travessilla-Rock outcrop complex, 6 to 60 percent slopes

## Map Unit Composition

Travessilla and similar soils: 60 percent

Rock outcrop: 25 percent Minor components: 15 percent

## Component Descriptions

#### Travessilla

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains Landform: Escarpments

Parent material: Residuum weathered from sandstone

Slope: 6 to 60 percent

Depth to restrictive feature: 4 to 20 inches to bedrock

(lithic)

Drainage class: Well drained

Slowest permeability class: Moderately rapid

Available water capacity: Very low (about 1.3 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Ecological site: Sandstone Breaks Land capability (nonirrigated): 7e

Typical profile:

A-0 to 3 inches; sandy loam

Bw—3 to 13 inches; gravelly sandy loam R—13 to 23 inches; unweathered bedrock

#### **Rock outcrop**

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains
Landform: Escarpments
Parent material: Sandstone
Slope: 6 to 60 percent
Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Land capability (nonirrigated): 8s

#### **Minor components**

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent

Drainage class: Well drained Ecological site: Loamy Plains

Midway and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 40 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shaly Plains

Valent and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

# 189—Truckton sandy loam, 1 to 5 percent slopes

## **Map Unit Composition**

Truckton and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Truckton

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately rapid Available water capacity: Low (about 4.5 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very low Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 16 inches; sandy loam

C—16 to 60 inches; loamy coarse sand

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 4 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

#### Additional feature

Blowouts occur in areas of this map unit.

# 190—Truckton sandy loam, 5 to 9 percent slopes

## Map Unit Composition

Truckton and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

### **Truckton**

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 9 percent

Drainage class: Well drained

Slowest permeability class: Moderately rapid Available water capacity: Low (about 4.5 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 16 inches; sandy loam

C—16 to 60 inches; loamy coarse sand

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Ascalon and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Well drained Ecological site: Sandy Plains

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Valent and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

# 191—Truckton sandy loam, dry, 1 to 5 percent slopes

## **Map Unit Composition**

Truckton and similar soils: 85 percent Minor components: 15 percent

#### Component Descriptions

#### **Truckton**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately rapid Available water capacity: Low (about 4.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater

than 6 feet

Runoff class: Very low Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 16 inches; sandy loam

C—16 to 60 inches; loamy coarse sand

## Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Bresser and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

# 192—Truckton sandy loam, dry, 5 to 9 percent slopes

# Map Unit Composition

Truckton and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### **Truckton**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 9 percent

Drainage class: Well drained

Slowest permeability class: Moderately rapid Available water capacity: Low (about 4.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater

than 6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 16 inches; sandy loam

C-16 to 60 inches; loamy coarse sand

#### Minor components

Bresser and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Sandy Plains

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Haxtun and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Valent and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 9 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

# 193—Valent sand, 3 to 20 percent slopes

### **Map Unit Composition**

Valent and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

#### Valent

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains

Landform: Dunes

Parent material: Eolian deposits

Slope: 3 to 20 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Low (about 4.1 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Deep Sands Land capability (nonirrigated): 6e

Typical profile:

A—0 to 3 inches; sand C—3 to 60 inches; sand

#### Minor components

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Olnest and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 12 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Gravel pits

Extent: About 2 percent of the unit

Slope: 0 to 3 percent

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

• Blowouts occur in areas of this map unit.

# 194—Valent-Bijou complex, 1 to 12 percent slopes

#### Map Unit Composition

Valent and similar soils: 55 percent Bijou and similar soils: 30 percent Minor components: 15 percent

## Component Descriptions

#### Valent

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains

Landform: Dunes

Parent material: Eolian deposits

Slope: 1 to 12 percent

Drainage class: Excessively drained Slowest permeability class: Rapid Available water capacity: Low (about 4.1

inches

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Deep Sands Land capability (nonirrigated): 6e

Typical profile:

A—0 to 3 inches; sand C—3 to 60 inches; sand

#### Bijou

MLRA: 67—Central High Plains; 69—Upper Arkansas

Valley Rolling Plains Landform: Interdunes

Parent material: Eolian deposits

Slope: 1 to 12 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Low (about 5.5

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; loamy sand AB—4 to 9 inches; loamy sand Bt—9 to 36 inches; sandy loam C—36 to 60 inches; loamy sand

#### Minor components

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Olnest and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Truckton and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent Drainage class: Well drained Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

#### Additional feature

Blowouts occur in areas of this map unit.

# 195—Valent-Vona complex, 3 to 25 percent slopes

## Map Unit Composition

Valent and similar soils: 60 percent Vona and similar soils: 30 percent Minor components: 10 percent

#### Component Descriptions

## Valent

MLRA: 67—Central High Plains

Landform: Dunes

Parent material: Eolian deposits

Slope: 3 to 25 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Low (about 4.1 inches) Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Deep Sands Land capability (nonirrigated): 6e

Typical profile:

A-0 to 3 inches; sand

C-3 to 60 inches; sand

#### Vona

MLRA: 67—Central High Plains

Landform: Interdunes

Parent material: Eolian deposits

Slope: 3 to 15 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.1

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 7 inches; loamy sand Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

#### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained Ecological site: Salt Flat

Haxtun and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

#### Additional feature

• Blowouts occur in areas of this map unit.

# 196—Valent-Vonid complex, 3 to 25 percent slopes

## **Map Unit Composition**

Valent and similar soils: 55 percent Vonid and similar soils: 35 percent Minor components: 10 percent

## **Component Descriptions**

#### Valent

MLRA: 69—Upper Arkansas Valley Rolling

Plains Landform: Dunes

Parent material: Eolian deposits

Slope: 3 to 25 percent

Drainage class: Excessively drained Slowest permeability class: Rapid Available water capacity: Low (about 4.1

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Deep Sands Land capability (nonirrigated): 6e

Typical profile:

A—0 to 3 inches; sand C—3 to 60 inches; sand

#### Vonid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Interdunes

Parent material: Eolian deposits

Slope: 3 to 15 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.6

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; loamy sand Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

## Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Haxtun and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Sandy Plains

#### **Additional feature**

Blowouts occur in areas of this map unit.

# 197—Vona loamy sand, 1 to 9 percent slopes

## **Map Unit Composition**

Vona and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

#### Vona

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 9 percent

Drainage class: Somewhat excessively

drained

Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.1

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

#### Typical profile:

Ap—0 to 7 inches; loamy sand Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

#### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Valent and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

#### Additional feature

Blowouts occur in areas of this map unit.

# 198—Vona sandy loam, 1 to 5 percent slopes

## **Map Unit Composition**

Vona and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

### Vona

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.4

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very low Ecological site: Sandy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 7 inches; sandy loam Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

#### Minor components

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Fort Collins and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Kimst and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

#### **Additional feature**

• Blowouts occur in areas of this map unit.

# 199—Vona sandy loam, 5 to 12 percent slopes

## **Map Unit Composition**

Vona and similar soils: 85 percent Minor components: 15 percent

### **Component Descriptions**

#### Vona

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 12 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.4

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

#### Typical profile:

Ap—0 to 7 inches; sandy loam Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

### **Minor components**

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent
Drainage class: Well drained
Ecological site: Salt Flat

Fort Collins and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 2 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Otero and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

### **Additional features**

· Blowouts occur in areas of this map unit.

• Some areas adjacent to streams have short steep slopes.

## 200—Vona-Karval-Midway, moist, complex, 5 to 25 percent slopes

Map Unit Composition

Vona and similar soils: 35 percent Karval and similar soils: 30 percent Midway and similar soils: 20 percent Minor components: 15 percent

## Component Descriptions

#### Vona

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 10 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.4

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 7 inches; sandy loam Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

### Karval

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium Slope: 10 to 25 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Very low (about 2.6

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Gravel Breaks Land capability (nonirrigated): 6e

Typical profile:

A—0 to 5 inches; gravelly loamy sand Bk—5 to 40 inches; gravelly coarse sand

C-40 to 60 inches; sand

### Midway

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 10 to 25 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

## **Minor components**

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Razor and similar soils

Extent: About 4 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

Rock outcrop

Extent: About 3 percent of the unit

Slope: 5 to 40 percent

Valent and similar soils

Extent: About 3 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

### **Additional feature**

• Some areas adjacent to streams have short steep slopes.

## 201—Vona-Midway, moist, complex, 3 to 12 percent slopes

Map Unit Composition

Vona and similar soils: 55 percent

Midway and similar soils: 30 percent Minor components: 15 percent

## **Component Descriptions**

#### Vona

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 12 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 6.4 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 7 inches; sandy loam Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

### Midway

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Residuum weathered from clayey shale

Slope: 3 to 12 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches: weathered bedrock

### Minor components

Karval and similar soils

Extent: About 5 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks Olnest and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Otero and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

# 202—Vona-Seldom sandy loams, 3 to 25 percent slopes

## Map Unit Composition

Vona and similar soils: 60 percent Seldom and similar soils: 20 percent Minor components: 20 percent

### **Component Descriptions**

### Vona

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 25 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 6.4 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 7 inches; sandy loam Bt—7 to 16 inches; sandy loam Bk1—16 to 25 inches; sandy loam Bk2—25 to 60 inches; loamy sand

### Seldom

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 3 to 25 percent

Drainage class: Somewhat poorly drained Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 7.4 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: About 6 to 24

inches
Runoff class: High

Ecological site: Wet Meadow Land capability (nonirrigated): 6e

Typical profile:

A1—0 to 7 inches; sandy loam A2—7 to 15 inches; sandy loam Bkg1—15 to 42 inches; sandy loam

Bkg2-42 to 60 inches; stratified sandy loam to

sandy clay loam

## Minor components

Midway and similar soils

Extent: About 10 percent of the unit

Slope: 5 to 40 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shaly Plains

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Manzanst and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Drainage class: Well drained Ecological site: Alkaline Plains

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

## 203—Vonid loamy sand, 1 to 9 percent slopes

## **Map Unit Composition**

Vonid and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

### Vonid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 9 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 6.6 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; loamy sand Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

### **Minor components**

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Valent and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

## **Additional feature**

• Blowouts occur in areas of this map unit.

## 204—Vonid sandy loam, 1 to 5 percent slopes

### Map Unit Composition

Vonid and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

### Vonid

MLRA: 69—Upper Arkansas Valley Rolling

Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 1 to 5 percent

Drainage class: Somewhat excessively

drained

Slowest permeability class: Moderately

rapid

Available water capacity: Moderate (about 6.9

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very low Ecological site: Sandy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

### Minor components

Apishapa and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent Drainage class: Well drained

Ecological site: Salt Flat

Fort and similar soils

Extent: About 4 percent of the unit

Slope: 3 to 5 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

### **Additional feature**

• Some areas adjacent to streams have short steep slopes.

## 205—Vonid sandy loam, 5 to 12 percent slopes

### Map Unit Composition

Vonid and similar soils: 85 percent Minor components: 15 percent

### **Component Descriptions**

### Vonid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 12 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.9

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

### Minor components

Fort and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 5 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Oterodry and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

## 206—Vonid-Karval-Midway complex, 5 to 25 percent slopes

### Map Unit Composition

Vonid and similar soils: 35 percent Karval and similar soils: 30 percent Midway and similar soils: 20 percent Minor components: 15 percent

### Component Descriptions

### Vonid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 5 to 10 percent

Drainage class: Somewhat excessively

drained

Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.9

nches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

### Karval

MLRA: 69—Upper Arkansas Valley Rolling

Plains Landform: Hills

Parent material: Alluvium Slope: 10 to 25 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Very low (about 2.6

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium

Ecological site: Gravel Breaks Land capability (nonirrigated): 6e

Typical profile:

A—0 to 5 inches; gravelly loamy sand Bk—5 to 40 inches; gravelly coarse sand

C—40 to 60 inches; sand

Midway

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 10 to 25 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

**Minor components** 

Olney and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Razor and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

Rock outcrop

Extent: About 2 percent of the unit

Slope: 5 to 40 percent

Valent and similar soils

Extent: About 2 percent of the unit

Slope: 3 to 20 percent

Drainage class: Excessively drained

Ecological site: Deep Sands

Gravel pits

Extent: About 1 percent of the unit

Slope: 0 to 3 percent

### Additional feature

 Some areas adjacent to streams have short steep slopes.

## 207—Vonid-Midway complex, 3 to 12 percent slopes

## **Map Unit Composition**

Vonid and similar soils: 55 percent Midway and similar soils: 30 percent Minor components: 15 percent

### **Component Descriptions**

#### Vonid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 12 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid Available water capacity: Moderate (about 6.9

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

### Midway

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Residuum weathered from clayey

shale

Slope: 3 to 12 percent

Depth to restrictive feature: 6 to 20 inches to bedrock

(paralithic)

Drainage class: Well drained

Slowest permeability class: Very slow

Available water capacity: Very low (about 2.4

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Very high

Ecological site: Shaly Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; clay loam By—4 to 15 inches; clay loam

Cr—15 to 25 inches; weathered bedrock

### Minor components

Karval and similar soils

Extent: About 4 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Olney and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 12 percent Drainage class: Well drained Ecological site: Sandy Plains

Oterodry and similar soils

Extent: About 3 percent of the unit

Slope: 5 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Razor and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

## 208—Vonid-Seldom sandy loams, 3 to 25 percent slopes

### Map Unit Composition

Vonid and similar soils: 65 percent Seldom and similar soils: 20 percent Minor components: 15 percent

## **Component Descriptions**

### Vonid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Eolian deposits

Slope: 3 to 25 percent

Drainage class: Somewhat excessively drained Slowest permeability class: Moderately rapid

Available water capacity: Moderate (about 6.9

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Sandy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 6 inches; sandy loam Bt—6 to 34 inches; sandy loam Bk1—34 to 52 inches; sandy loam Bk2—52 to 60 inches; sandy loam

#### Seldom

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 3 to 25 percent

Drainage class: Somewhat poorly drained Slowest permeability class: Moderately slow Available water capacity: Moderate (about 7.4

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: About 6 to 24

inches
Runoff class: High

Ecological site: Wet Meadow Land capability (nonirrigated): 6e

Typical profile:

A1—0 to 7 inches; sandy loam A2—7 to 15 inches; sandy loam Bkg1—15 to 42 inches; sandy loam

Bkg2—42 to 60 inches; stratified sandy loam to

sandy clay loam

### Minor components

Arvada and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Fort and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Midway and similar soils

Extent: About 4 percent of the unit

Slope: 5 to 40 percent

Depth to restrictive feature: 6 to 20 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Shaly Plains

Razor and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Alkaline Plains

## 209—Wages loam, 2 to 6 percent slopes

### **Map Unit Composition**

Wages and similar soils: 85 percent Minor components: 15 percent

### **Component Descriptions**

## Wages

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 2 to 6 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 5 inches; loam Bt—5 to 12 inches; loam Bk—12 to 17 inches; loam C—17 to 60 inches; loam

### Minor components

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent
Drainage class: Well drained
Ecological site: Salt Flat

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks Kimst and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

### Additional feature

• Some areas adjacent to streams have short steep slopes.

## 210—Wages loam, 6 to 12 percent slopes

## **Map Unit Composition**

Wages and similar soils: 85 percent Minor components: 15 percent

### Component Descriptions

### Wages

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 6 to 12 percent Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: Moderate (about 8.8 inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

A—0 to 4 inches; loam Bt—4 to 10 inches; loam Bk—10 to 35 inches; loam C—35 to 60 inches; loam

### **Minor components**

Karval and similar soils

Extent: About 5 percent of the unit

Slope: 6 to 15 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Otero and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 5 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

Apishapa and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Rock outcrop

Extent: About 2 percent of the unit

Slope: 5 to 40 percent

### **Additional feature**

• Some areas adjacent to streams have short steep slopes.

## 211—Wages loam, dry, 1 to 5 percent slopes

## Map Unit Composition

Wages and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

### **Wages**

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 1 to 5 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4e

Typical profile:

A—0 to 4 inches; loam

Bt—4 to 10 inches; loam Bk—10 to 35 inches; loam C—35 to 60 inches; loam

### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Kim and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 12 percent
Drainage class: Well drained
Ecological site: Loamy Plains

Platner and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Sampson and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Overflow

# 212—Wages-Karval complex, 6 to 15 percent slopes

### Map Unit Composition

Wages and similar soils: 60 percent Karval and similar soils: 25 percent Minor components: 15 percent

## Component Descriptions

## Wages

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium and/or eolian deposits

Slope: 6 to 15 percent Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: Moderate (about 8.8

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 6e

### Typical profile:

A—0 to 4 inches; loam Bt—4 to 10 inches; loam Bk—10 to 35 inches; loam C—35 to 60 inches; loam

### Karval

MLRA: 67—Central High Plains

Landform: Hills

Parent material: Alluvium Slope: 6 to 15 percent

Drainage class: Excessively drained Slowest permeability class: Rapid

Available water capacity: Very low (about 2.6

inches)

Shrink-swell potential: Low (about 1.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Gravel Breaks Land capability (nonirrigated): 6e

## Typical profile:

A—0 to 5 inches; gravelly loamy sand Bk—5 to 40 inches; gravelly coarse sand

C-40 to 60 inches; sand

### **Minor components**

Colby and similar soils

Extent: About 5 percent of the unit

Slope: 3 to 12 percent
Drainage class: Well drained
Ecological site: Loamy Slopes

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Platner and similar soils

Extent: About 4 percent of the unit

Slope: 0 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Rock outcrop

Extent: About 1 percent of the unit

Slope: 5 to 40 percent

### **Additional feature**

• Some areas adjacent to streams have short steep slopes.

### 213—Weld silt loam, 0 to 2 percent slopes

### **Map Unit Composition**

Weld and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

### Weld

MLRA: 67—Central High Plains

Landform: Plains
Parent material: Loess
Slope: 0 to 2 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.9 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 3c

Typical profile:

A—0 to 4 inches; silt loam Bt—4 to 19 inches; silty clay

Btk—19 to 44 inches; silty clay loam Bk—44 to 60 inches; silt loam

## Minor components

Colby and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Rago and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Overflow

## 214—Weld silt loam, dry, 0 to 2 percent slopes

### Map Unit Composition

Weld and similar soils: 85 percent Minor components: 15 percent

### Component Descriptions

### Weld

MLRA: 69—Upper Arkansas Valley Rolling

Plains
Landform: Plains
Parent material: Loess
Slope: 0 to 2 percent

Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about 10.9 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 4c

Typical profile:

A—0 to 4 inches; silt loam Bt—4 to 19 inches; silty clay

Btk—19 to 44 inches; silty clay loam

Bk—44 to 60 inches; silt loam

### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly drained

Ecological site: Plains Swale

Colby and similar soils

Extent: About 5 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Keith and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Rago and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent Drainage class: Well drained Ecological site: Overflow

## 215—Wiley silt loam, 0 to 3 percent slopes

### **Map Unit Composition**

Wiley and similar soils: 85 percent Minor components: 15 percent

### Component Descriptions

### Wiley

MLRA: 67—Central High Plains

Landform: Plains
Parent material: Loess
Slope: 0 to 3 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow

Available water capacity: High (about 10.6 inches) Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 3e

Typical profile:

Ap—0 to 4 inches; silt loam

Btk—4 to 23 inches; silty clay loam C—23 to 60 inches; silt loam

### **Minor components**

Arvada and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 5 percent

Drainage class: Well drained Ecological site: Salt Flat

Colby and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Karval and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 7 percent

Drainage class: Excessively drained Ecological site: Gravel Breaks

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Vona and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 9 percent

Drainage class: Somewhat excessively drained

Ecological site: Sandy Plains

## 216—Wiley silt loam, 3 to 12 percent slopes

## Map Unit Composition

Wiley and similar soils: 85 percent Minor components: 15 percent

## **Component Descriptions**

## Wiley

MLRA: 67—Central High Plains

Landform: Hills
Parent material: Loess
Slope: 3 to 12 percent
Drainage class: Well drained

Slowest permeability class: Moderately slow Available water capacity: High (about

10.6 inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Medium Ecological site: Loamy Plains Land capability (nonirrigated): 6e

Typical profile:

Ap—0 to 4 inches; silt loam Btk—4 to 23 inches; silty clay loam C—23 to 60 inches; silt loam

### Minor components

Baca and similar soils

Extent: About 5 percent of the unit Geomorphic position: Plains

Slope: 0 to 3 percent

Drainage class: Well drained

Fort Collins and similar soils

Extent: About 5 percent of the unit

Slope: 5 to 10 percent Drainage class: Well drained Ecological site: Loamy Plains

Pleasant and similar soils

Extent: About 3 percent of the unit

Slope: 0 to 1 percent

Drainage class: Moderately well drained

Ecological site: Plains Swale

Razor and similar soils

Extent: About 2 percent of the unit

Slope: 1 to 5 percent

Depth to restrictive feature: 20 to 40 inches to

bedrock (paralithic)

Drainage class: Well drained

Ecological site: Clayey Plains

## 217—Wilid silt loam, 0 to 3 percent slopes

## Map Unit Composition (fig. 3)

Wilid and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

### Wilid

MLRA: 69—Upper Arkansas Valley Rolling Plains

Landform: Plains
Parent material: Loess
Slope: 0 to 3 percent

Drainage class: Well drained

Slowest permeability class: Moderate Available water capacity: High (about 10.6

inches)

Shrink-swell potential: Moderate (about 4.5 LEP)

Flooding hazard: None

Depth to seasonal zone of saturation: Greater than

6 feet

Runoff class: Low

Ecological site: Loamy Plains Land capability (nonirrigated): 4c

### Typical profile:

Ap—0 to 3 inches; silt loam

Btk—3 to 21 inches; silty clay loam Bk—21 to 60 inches; silt loam

### Minor components

Apishapa and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 3 percent

Drainage class: Somewhat poorly

drained

Ecological site: Plains Swale

Bacid and similar soils

Extent: About 5 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Loamy Plains



Figure 3.—Wheat in an area of Wilid silt loam, 0 to 3 percent slopes.

Fort and similar soils

Extent: About 3 percent of the unit

Slope: 1 to 3 percent

Drainage class: Well drained Ecological site: Loamy Plains

Weld and similar soils

Extent: About 2 percent of the unit

Slope: 0 to 2 percent

Drainage class: Well drained Ecological site: Loamy Plains

### 218—Water

### **Component Description**

Water includes streams, lakes, ponds, and estuaries.

These areas are covered with water in most years, at least during the period that is warm enough for

plants to grow. Many areas are covered throughout the year.

Pits, blowouts, and playas that contain water most of the time are mapped as Water.

## 219—Gravel pits

## **Component Description**

Gravel pits are open excavations from which soil and commonly underlying material have been removed, exposing either rock or other material.

### 220—Access denied

### Component Description

Soils information is not available on access denied areas. Permission to access these areas was not given by the owners.

## **Prime Farmland**

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land. pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not

excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

## **Use and Management of the Soils**

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

## **Interpretive Ratings**

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

### **Rating Class Terms**

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are not limited, somewhat limited, and very limited. The suitability ratings are expressed as well suited, moderately well suited, poorly suited, and unsuited or as good, fair, and poor.

### **Numerical Ratings**

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

## Crops

Brian C. Johnson, District Conservationist, and Dr. P. Lorenz Sutherland, Conservation Agronomist, Natural Resources Conservation Service, prepared this section.

General management needed for crops is suggested in this section. The yields of the main crops are discussed and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Detailed Soil Map Units." Specific information can be obtained from the local office of the

Natural Resources Conservation Service or the Cooperative Extension Service.

Agronomic management practices needed for the crops grown in Lincoln County are suggested in this section. The grain and hay crops that are best suited to the soils, including some that are not common in the survey area, are identified. Irrigated cropland acreage in the county is very small and is primarily limited to farming areas irrigated by center-pivot sprinkler methods. Only the use and management of the soils for nonirrigated crop production is discussed.

On the nonirrigated cropland in Lincoln County, the primary grain crops are winter wheat, grain sorghum (fig. 4), and millet. Proso millet and foxtail millet are grown to support an active birdseed market. Secondary crops include sunflower (fig. 5) and corn. These two crops are increasing in importance in the county as markets and management options are expanded. The primary crops grown for hay and silage are millet and sorghum-sudangrass. Alfalfa is grown on a limited basis.

Soil degradation and soil erosion are the main factors that affect the productivity and economic sustainability of the cropland in Lincoln County. Soil degradation has resulted from widespread application of fallow and tillage. This intensive use of the cropland soil resource has reduced yields primarily because of diminished organic matter and other related soil quality elements. Soil erosion from wind and water is a major resource concern. Wind erosion results in surface creep, saltation, and suspension. Interill-rill erosion and ephemeral gully formation are the main concerns resulting from water erosion. The primary effect resulting from soil erosion is reduced soil productivity. Damage to growing crops from the abrasion of blowing soil aggregates also occurs. Secondary effects of water erosion result in deposition of sediments in streams and small bodies of water.

The Best Management Practices (BMP) that address diminished soil health involve the adoption of crop rotations that provide increased intensity and diversity and offer greater yield potentials. The



Figure 4.—Sorghum grown for hay in an area of Haxtun-Olnest loamy sands, 0 to 3 percent slopes.



Figure 5.—These sunflowers are part of a typical wheat-fallow system of crop rotation. Pictured is an area of Colby-Weld silt loams, 1 to 5 percent slopes.

increased yield potentials are attributed to decreased pressure from weeds, insects, nematodes, and diseases. Nitrogen inputs from legumes, increased crop residue amounts, improved soil physical characteristics, and favorable cycling of nitrogen and carbon also increase yields. Rotation intensity assures the maximum utilization of effective precipitation and is defined by the water use of individual crops in the rotation. The crop types considered are classified into four groups; cool-season grasses (winter wheat, triticale), warm-season grasses (corn, grain sorghum), cool-season broadleaf crops (peas, canola), and warm-season broadleaf crops (sunflower, soybean). Increased diversity promotes effective nutrient cycling and decreased ecological risks associated with disease and weed populations.

For most of the soils in Lincoln County an aggressive conservation tillage system of residue management is needed to minimize soil loss, cut production costs, and maintain or increase yields. Keeping the crop residue on the surface through

proper management of tillage and grazing is important. The standing and flat-oriented residues need to be managed for maximum soil surface protection. During periods when the amount of crop residue is inadequate, selecting the proper tillage tool is important in keeping the soil surface rough.

Other measures for reducing the hazard of soil blowing include stripcropping, cross wind trap strips, and herbaceous wind barriers. These practices are moderately effective in Lincoln County. These alternative practices are recommended in areas where low residue producing crops are grown or in areas where crops are harvested for hay and silage. A wind stripcropping system consists of small grains grown in strips alternating with row crops or fallow. The strips, spaced no more than 660 feet apart, are arranged at angles approximately perpendicular to the prevailing wind direction. Cross wind trap strips, made up of annual vegetation, are established to induce soil deposition. These trap strips, with minimum widths of 15 to 25 feet, can be placed at windward field edges or

immediately upwind from the area to be protected or arranged in recurring patterns between erosion susceptible strips. The most common vegetation used in the establishment of cross wind trap strips is forage sorghum or sorghum-sudangrass cultivars. Herbaceous wind barriers consist of one to two rows of annual or perennial plants planted perpendicular to the prevailing wind direction with sufficient height and porosity to reduce soil erosion. Perennial grasses suitable for use as herbaceous wind barriers include tall wheatgrass, switchgrass, big bluestem, Indiangrass, or basin wildrye.

Terrace systems are widely accepted as a BMP for field protection against water erosion. The primary purpose of terraces is to reduce slope length, thereby controlling soil erosion and increasing crop productivity. Terraces in Lincoln County are level broad base and flat channel types. Generally, the terrace ends are partly closed and storm runoff storage capacity is designed for a 10-year frequency, 24-hour rainfall event. Terraces are practical on very deep soils that have slopes of 8 percent or less. Terrace systems should be used in combination with contour farming, contour stripcropping, and crop residue management.

Soil testing is an important BMP for determining crop nutrient needs. Annual sampling of each field is suggested, particularly if more complex crop rotations are used. The nutrient recommendations should be consistent with those from the State Land Grant University or a private testing laboratory. Routine soil sampling and analyses also provides valuable information about organic matter, pH, and soil salinity. Nitrogen and phosphorus are the most limiting nutrients in the county. Sulfur is deficient in some soils, particularly sandy soils that have a low organic matter content. Measures that provide for the proper amount, timing, and placement of fertilizer greatly enhance the sustainability and economic viability while minimizing surface water contamination.

### **Land Capability Classification**

Land capability classification (USDA, 1961) shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for

interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are grouped at two levels—capability class and subclass.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, e, w, s, or c, to the class numeral, for example, 2e. The letter e shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by w, s, or c because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

### **Management by Nonirrigated Capability Class**

In this section, each nonirrigated capability class in Lincoln County is described and the use and management of the soils are discussed.

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3c, nonirrigated, soils are suited to most adapted crops. They are limited mainly by occasional periods of drought. The winter wheat-fallow and millet crop sequences are best adapted to these farming areas.

Management of these soils includes an aggressive crop residue program to control runoff and soil blowing while maintaining tilth and organic matter. In areas where crop residue is inadequate, keeping the soil surface rough and cloddy can control soil blowing.

Class 3e, nonirrigated, soils are suited to all adapted crops. The more intense and diverse crop sequences are adaptable to the soils in this capability class. A sequence of two crops in three years, such as winter wheat-sorghum-fallow, works well in these farming areas. Sunflower, corn, or millet can be

substituted into the second year of the rotation. The summer annual crops are direct seeded (no-till) into the small grain stubble from the previous year. Mulch tillage is used during the fallow phase of the rotation for weed control and fertilizer applications. The soils in this capability class respond favorably to nitrogen and phosphorus fertilizer applications. On steeper slopes, terracing and contour planting help to control erosion.

In some areas of the county that have favorable precipitation patterns, these soils can support crop sequences that eliminate fallow. The most common sequences are millet-winter wheat and winter wheat-corn-millet. These crops are direct seeded (no-till). Measures to enhance fertilizer management programs need to be promoted.

Class 4c, nonirrigated, soils are suited to most adapted crops. They are limited mainly by occasional periods of drought. The winter wheat-fallow and millet sequences are the best adapted to these farming areas. Grain sorghums and other warm-season row crops are not well adapted to these soils. Keeping adequate cover on these soils is essential in areas where the hazard of soil blowing is severe and runoff potential is high.

Recommended measures for controlling the hazard of soil blowing include mulch tillage and stripcropping. On steeper slopes, terracing and contour planting help to control erosion. Management of these soils includes an aggressive crop residue program to control runoff and soil blowing while maintaining tilth and organic matter. In areas where crop residue is inadequate, keeping the soil surface rough and cloddy can control soil blowing.

Class 4e, nonirrigated, soils are suited to most adapted crops, but intensive care and management is needed. The hazard of soil blowing is severe. Runoff potential is high on the steeper slopes. Keeping adequate ground cover is essential. The predominant cropping sequences are winter wheat-fallow and millet. Such feed and annual hay crops as sorghumsudangrass can be planted following hail- or wind-damaged wheat crops. These soils produce acceptable feed and forage yields (fig. 6).

Recommended measures for controlling the hazard of soil blowing include mulch tillage and stripcropping. On steeper slopes, terracing and contour planting help to control erosion.

Class 4w, nonirrigated, soils are suited to most adapted crops. They occur in depressions or on flood plains. Rare ponding or rare or occasional flooding limits these soils. In the absence of ponding or flooding, these soils are susceptible to the hazard of soil blowing.

Areas of cropland are farmed in a similar manner as the surrounding cropland when the soils are dry enough to support farming equipment. When tillage and planting operations are not possible, these fields serve as sources of food and cover for migrating waterfowl and other wildlife species.

Class 6c, nonirrigated, soils are suitable for very limited cropping. They are in the southern part of the county and are limited by periods of drought. The winter wheat-fallow sequence is the best adapted to these farming areas.

The hazard of soil blowing is severe. Runoff potential is high. Intensive management is necessary to control erosion if these soils are used as cropland. Cultivated areas should be returned to permanent vegetation.

Class 6e, nonirrigated, soils are suitable for very limited cropping. The hazard of soil blowing is moderate. The runoff potential is high. Intensive management is necessary to control erosion if these soils are used as cropland. Cultivated areas should be returned to permanent vegetation.

Small eroded areas of soils that were formerly cultivated are in some fields. A good cover crop producing abundant residue should be grown to stabilize these soils before they are reseeded to permanent vegetation.

Class 7e, nonirrigated, soils in this class are used primarily as native rangeland or for wildlife habitat. They are unsuitable for cultivated crop production. These soils are on side slopes. The hazards of wind erosion and water erosion are severe. If these soils are cultivated or over-grazed severe interill-rill erosion and gully formation can occur.

Loss of the soil surface layer through erosion severely decreases the potential for successful revegetation. In formerly cultivated fields, range seeding is a suitable practice. A good cover crop producing abundant residue should be grown to stabilize the soils before they are reseeded to permanent vegetation.

Classes 6s and 7s, nonirrigated, soils are not suitable for cultivation. These capability classes consist of soils that are shallow to bedrock, have low permeability, or have a high sodium adsorption ratio. Available moisture, the presence of soluble salts or exchangeable sodium, or both, are serious limitations affecting many soils in these capability classes. The runoff potential is high on the steeper slopes, resulting in severe interill-rill erosion. Also, runoff from underlying geologic materials can result in the formation of gullies on lower lying soils.

These soils are used as native rangeland, wildlife habitat, or both. Good grazing management is needed



Figure 6.—A dryland wheat field that has been established to native warm- and cool-season grasses under the Conservation Reserve Program. This area is in land capability class 4e.

to maintain and improve the production of the native grass, shrub, and forb species.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and in table 6.

### **Yields per Acre**

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include erosion control and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops.

Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

The general crop production index, table 7, is a relative rating of the capacity of a soil to produce a specific plant under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yields, the net returns from crops, land assessment values, taxes, and to perform risk analysis when land management decisions are made.

## Rangeland

Ben P. Berlinger, Rangeland Management Specialist, Natural Resources Conservation Service, helped prepare this section.

Rangeland is defined as a kind of land on which the native vegetation consists of grasses, grass-like plants, forbs, and shrubs, and where routine management is accomplished through the application of ecological principles. In areas that have similar climate and topography, differences in the kind and amount of rangeland are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation.

About 64 percent of Lincoln County is rangeland. The rangeland in the county is classified as short-grass prairie and sand sagebrush mixed-grass prairie of the Central High Plains and Upper Arkansas Valley Rolling Plains Major Land Resource Areas (MLRAs). The cow-calf-yearling enterprise is the dominant type of ranching. The ranches are intermingled with cropland. Many ranches supplement range forage with wheat pasture. During the winter the range forage is commonly supplemented with a protein concentrate.

Table 8 shows, for each soil that supports vegetation suitable for grazing, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in table 8 follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over

time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Characteristic vegetation—the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil—is listed by common name. Under maximum rangeland composition, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the reference plant community on a particular rangeland ecological site. The reference plant community can be the historical climax plant community or any of the vegetative states identified for a particular ecological site. The more closely the existing community resembles the

reference community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in chapter 4 of the "National Range and Pasture Handbook," which is available in local offices of the Natural Resources Conservation Service.

The objective in range management is to manage grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Rangeland management based on soil survey information and rangeland inventories can increase forage production and lead to improved rangeland health. This is achieved most economically by applying the tools of grazing, animal impact, and rest. This will benefit the four ecosystem foundation blocks; mineral cycle, water cycle, energy flow, and community succession. Prescribed grazing is the major management need. With prescribed grazing, the frequency and intensity of grazing, as well as the opportunity for plants to recover from grazing, are controlled so that the kinds and amounts of plants that make up the desired plant community are reestablished and maintained in a healthy condition.

Prescribed grazing, or the application of a planned grazing system, improves the condition of a range site and enhances wildlife habitat. Deferment is the postponement of grazing during part or all of the growing season of key forage plants. Rotating deferment among several fields improves the entire rangeland unit. It allows the forage plants to grow to an adequate height before they are grazed and thus helps to replenish root food reserves and develop mature seed. Fencing, developing water areas, and distributing salt areas may be necessary to help achieve a more uniform distribution of grazing.

Range seeding may be necessary to improve seriously depleted rangeland. Sandy soils can be seeded by the rangeland interseeder method, which reduces the hazard of erosion. Loamy soils can be seeded most successfully by drilling the grass seed into a preparatory warm-season stubble cover of sorghum or sudan. The best time for range seeding in this survey area is mid-November through mid-April.

Brush management is effective where competing shrubs, such as sand sagebrush, have significantly increased in abundance. Prescribed grazing will be mandatory following brush management to allow for the improvement of the ecological conditions and to prevent the brush species from increasing.

Ecological deterioration as a result of improper grazing management is described for the dominant ecological sites in Lincoln County.

Retrogression of the Loamy Plains (fig. 7) and Loamy Slopes ecological sites leads to a decrease in the relative abundance of such plants as western wheatgrass, green needlegrass, needleandthread, and sideoats grama with a corresponding increase of blue grama, buffalograss, galleta, red threeawn, and sand dropseed. Continued mismanagement results in these sites becoming dominated by a sodbound condition of blue grama and buffalograss with minor amounts of undesirable plants, such as broom snakeweed and plains pricklypear cactus.

Retrogression of the Clayey Plains, Alkaline Plains, Shaly Plains (fig. 8), Sandy Salt Flat, and Salt Flat (fig. 9) ecological sites results in a decrease in the relative abundance of such plants as western wheatgrass, green needlegrass, alkali sacaton, and switchgrass. Important shrubs, such as fourwing saltbush and winterfat, are very palatable and can be completely grazed out by continuous season-long grazing. The major plants that increase in relative abundance are blue grama, buffalograss, red threeawn, sand dropseed, broom snakeweed, and plains pricklypear. Continued deterioration of blue grama and buffalograss results in a low producing sodbound condition on the Clayey Plains site. Continued site degradation of the Shaly Plains and Salt Flat sites results in large areas of bare soil with little plant cover.

Retrogression of the Sandy Plains, Deep Sands, and Sandy Bottomland ecological sites results in an immediate decrease in the relative abundance of such plants as sand bluestem, prairie sandreed, needleandthread, switchgrass, yellow Indiangrass, little bluestem, sideoats grama, Bessey sandcherry, and leadplant amorpha. Sand dropseed, blue grama, sand sagebrush, blowout grass, and western ragweed are the principal increaser species. If further deterioration takes place, annual buckwheat, sand verbena, redthreeawn, and other annual forbs, along with the increaser species, dominate these sites. Blowout areas can readily start on the Deep Sands site when it is in a deteriorated condition resulting in additional damage to the soil and plant resources.

Retrogression of the Salt Meadow, Overflow, and Plains Swale ecological sites results in alkali sacaton,



Figure 7.—A typical landscape in the Loamy Plains range site. Pictured is an area of Weld soil.

western wheatgrass, switchgrass, prairie cordgrass, big bluestem, and fourwing saltbush decreasing from the plant community. Inland saltgrass, Baltic rush, foxtail barley, blue grama, and several forbs increase in relative abundance. Continued degradation of the Salt Meadow site results in a low diversity, almost monoculture, stand of inland saltgrass. Continued ecological deterioration of the Plains Swale site creates a sodbound condition of buffalograss and blue grama.

Retrogression of the Gravel Breaks and Sandstone Breaks ecological sites results in a decrease in the relative abundance of sideoats grama, little bluestem, needleandthread, Indian ricegrass, western wheatgrass, big bluestem, and switchgrass. Blue grama, hairy grama, galleta, and numerous forbs

increase in relative abundance. As retrogression proceeds, broom snakeweed, small soapweed, fringed sagebrush, Bigelow sagebrush, redthreeawn, and sand dropseed dominate these sites.

### Windbreaks and Environmental Plantings

Greg Sundstrom, Forester, Colorado State Forest Service and Natural Resources Conservation Service, helped prepare this section.

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection. A minimum of two rows is necessary for adequate protection in Lincoln County. In areas where

space is limited, a twin-row high density design consisting of two closely spaced rows with dense inrow tree spacing can be used, but 5 to 7 rows with 20 to 24 feet between rows give best results. Within rows in multiple row windbreaks, spacing of 14 to 18 feet for deciduous trees, 12 to 16 feet for evergreen trees, and 4 to 6 feet for shrubs provide best protection and room enough for individual trees to reach their growth potential.

When Lincoln County was first settled, tree plantings were made under the Timber Culture Act of 1873. Settlers planted ten acres of trees to acquire public land for a homestead. These timber claims go back to at least 1886. Few remnants of these early plantings remain.

Early settlers used trees for fuel, lumber, and fenceposts. Today, however, trees and shrubs are grown on most of the farmsteads and ranch headquarters in the county primarily to provide protection, control drifting snow, and improve

aesthetics. Trees need to be continually planted because trees and shrubs pass maturity and deteriorate. Insects, disease, or storms can destroy individual trees, or segments of tree rows in windbreaks.

Planting trees and shrubs away from their natural range places them in a stressful environment, causing them to be more susceptible to insect, disease, and environmental damage. To offset these factors and have a successful planting, the landowner should invest in the highest quality seedlings available, use species that can adapt to the soils in the area, and prepare a quality planting site.

Limited available soil moisture is the main factor restricting windbreak plantings in Lincoln County. Providing supplemental water and controlling competing plant growth (grass, weeds) are recognized methods of overcoming this limitation. A drip irrigation system and the use of plastics (fabricated mulches) for water collection, evaporation barriers, and weed



Figure 8.—A typical landscape in the Shaly Plains range site in northwestern Lincoln County. Pictured is an area of Shingle and Midway soils.



Figure 9.—An area of Arvada soil. This area is in the Salt Flat range site.

control are new windbreak technologies that have increased first year survival from 50 to more than 90 percent in areas that have limited soil moisture.

Field windbreaks protect cropland and crops from wind, help to keep snow on fields, and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced for these purposes.

Table 9 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 9 are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning, planting, and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service, Colorado State Forest Service, the Cooperative Extension Service, or from a commercial nursery.

## Recreation

Lincoln County offers a wide variety of recreational activities, such as hunting, fishing, hiking, camping, picnicking, and other outdoor recreational activities. Sightseeing and photography opportunities exist at the natural, scenic, and historical sites in the county and nearby areas.

Hunting in Lincoln County occurs during regular seasons, which include ring-necked pheasant, sharptailed grouse, rabbit, squirrel, raccoon, and coyote. Mourning dove are also common throughout the county and provide early opportunities for hunting in the fall. White-tailed deer, mule deer, and antelope are plentiful for big game hunters.

Hugo, the county seat, offers a nine-hole golf course, playgrounds, a museum, and a swimming pool.

The soils of the survey area are rated in tables 10a and 10b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the

specified use. Good performance and very low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 10a and 10b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These

properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

### Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 11, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be

expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, cottonwood, chokecherry, wild plum, gooseberry, black walnut, and mulberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated good are Russian-olive, autumn-olive, and skunkbush sumac.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are bitterbrush, winterfat, sand sagebrush, fourwing saltbush, skunkbush sumac, and rubber rabbitbrush.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include pronghorn, deer, meadowlark, and lark bunting.

## **Engineering**

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, agricultural waste management, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

### **Building Site Development**

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 12a and 12b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a

cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrinkswell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

### **Sanitary Facilities**

Tables 13a and 13b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice,

and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation,

trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an area sanitary landfill, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area

sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

### **Agricultural Waste Management**

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Tables 14a and 14b show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher

concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye

used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the

application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds, but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment;

hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of groundwater pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cationexchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

#### **Construction Materials**

Tables 15a and 15b give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They

are used in many kinds of construction. Specifications for each use vary widely. In table 15a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated as a *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the soil is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, or topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6

feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

### **Water Management**

Table 16 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to

overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, a cemented pan, or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

# **Soil Properties**

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

## **Engineering Index Properties**

Table 17 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

*Depth* to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam, for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, gravelly. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998). The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The

estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

## **Physical Properties**

Table 18 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 18, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at <sup>1</sup>/<sub>3</sub>- or <sup>1</sup>/<sub>10</sub>-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water

capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability ( $K_{\rm sat}$ ) refers to the ability of a soil to transmit water or air. The term permeability, as used in soil surveys, indicates saturated hydraulic conductivity ( $K_{\rm sat}$ ). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at <sup>1</sup>/<sub>3</sub>- or <sup>1</sup>/<sub>10</sub>-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 18, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor Kf* indicates the erodibility of the fineearth fraction, or the material less than 2 millimeters in size.

Erosion factor *T* is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

- 1. Coarse sands, sands, fine sands, and very fine sands.
- 2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
- 3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.
- 4L. Calcareous loams, silt loams, clay loams, and silty clay loams.
- 4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
- 5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
- 6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
- 7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
- 8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons

per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

## **Chemical Properties**

Table 19 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the

frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

#### Soil Features

Table 20 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. *Depth* refers to the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and

electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

#### Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface,

and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 21 indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *frequency* of ponding. Frequency is expressed as none, rare, and occasional, and frequent. None means that ponding is not probable; rare that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); occasional that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered

flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency are estimated. Duration is expressed as extremely brief if 0.1 hour to 4 hours, very brief if 4 hours to 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. None means that flooding is not probable; very rare that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); rare that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); occasional that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); frequent that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and very frequent that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

# Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 22 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Ustoll (*Ust*, meaning burnt, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Argiustolls (*Argi*, meaning white clay, plus *ustoll*, the suborder of Mollisols that have an ustic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. An example is Aridic Augiustolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, superactive, mesic Aridic Argiustolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

## Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). Unless otherwise indicated, matrix colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

## Apishapa Series

Depth class: Very deep

Drainage class: Somewhat poorly drained

Parent material: Alluvium Landform: Depressions Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent

MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Apishapa clay loam, 0 to 3 percent slopes, rarely ponded, about 2,138 feet west and 2,178 feet south of the northeast corner of sec. 35, T. 16 S., R. 53 W.

- Ap—0 to 8 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; weak very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; slightly alkaline; clear smooth boundary.
- AC—8 to 15 inches; light brownish gray (10YR 6/2) silty clay loam, dark gray (10YR 4/1) moist; moderate fine platy structure; hard, firm, moderately sticky and moderately plastic; common fine distinct brownish yellow (10YR 6/8) redoximophic concentrations; slightly alkaline; abrupt smooth boundary.
- C1—15 to 21 inches; grayish brown (10YR 5/2) silty clay, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; extremely hard, very firm, very sticky and very plastic; common fine distinct brownish yellow (10YR 6/8) redoximorphic concentrations; slightly alkaline; clear wavy boundary.
- C2—21 to 60 inches; pale brown (10YR 6/3) silty clay, dark grayish brown (10YR 4/2) moist; weak coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; violently effervescent; slightly alkaline.

## Range in Characteristics

Depth to calcium carbonate: 10 to greater than 18 inches Depth to redoximorphic features: 0 to 60 inches

#### A horizon:

Hue—10YR or 2.5Y

Value—5 to 7. 3 to 5 moist

Chroma—1 to 3

Texture—silty clay loam, loam, clay loam, silty clay, or clay

Reaction—moderately acid to moderately alkaline

#### AC horizon:

Hue—10YR or 2.5Y

Value—5 or 6, 4 or 5 moist

Chroma—1 or 2

Texture—clay, silty clay, silty clay loam, or clay

Reaction—neutral to strongly alkaline

#### C horizon:

Hue—10YR to 5Y

Value—5 or 6, 4 to 6 moist

Chroma—1 to 3

Texture—silty clay loam, silty clay, clay loam, or

clay

Reaction—neutral to strongly alkaline

#### Arvada Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium

Landform: Drainageways and fans Elevation: 4,400 to 6,000 feet

Slope: 0 to 5 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Arvada clay loam, 0 to 5 percent slopes, about 185 feet north and 265 feet east of the southwest corner of sec. 4, T. 17 S., R 53 W.

- A—0 to 4 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate fine granular structure; hard, friable, moderately sticky and very plastic; many very fine and few medium roots; common very fine pores; slightly effervescent; moderately alkaline; clear smooth boundary.
- Btn1—4 to 14 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; weak coarse prismatic structure parting to moderate medium and coarse subangular blocky; very hard, firm, very sticky and very plastic; common very fine and fine and few medium roots; common very fine pores; few faint clay films on faces of peds; strongly effervescent; few fine masses of salts; moderately alkaline; clear smooth boundary.
- Btn2—14 to 25 inches; light brownish gray (2.5Y 6/2) clay, dark grayish brown (2.5Y 4/2) moist; moderate coarse subangular blocky structure; extremely hard, very firm, moderately sticky and very plastic; few very fine and fine roots; few very fine pores; few faint clay films on faces of peds; strongly effervescent; few fine masses of salts; moderately alkaline; clear smooth boundary.
- Bkn1—25 to 35 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; weak medium and coarse subangular blocky structure;

extremely hard, firm, moderately sticky and moderately plastic; few very fine roots; few very fine pores; common fine masses of calcium carbonate; strongly effervescent; few fine masses of salts; moderately alkaline; clear smooth boundary.

Bkn2—35 to 44 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; weak coarse subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few very fine pores; few fine masses of calcium carbonate; strongly effervescent; few fine masses of salts; moderately alkaline; clear smooth boundary.

Bkny1—44 to 55 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, moderately sticky and moderately plastic; common very fine pores; many fine masses of calcium carbonate; slightly effervescent; few fine masses of salts; common fine masses of gypsum; 10 percent fine gravel; moderately alkaline; clear smooth boundary.

Bkny2—55 to 60 inches; grayish brown (2.5Y 5/2) silty clay, dark grayish brown (2.5Y 4/2) moist; massive; extremely hard, firm, moderately sticky and moderately plastic; few very fine pores; many fine masses of calcium carbonate; strongly effervescent; few fine masses of salts; common fine masses of gypsum; 5 percent fine gravel; moderately alkaline.

## Range in Characteristics

Some pedons have a C horizon.

#### A horizon:

Hue-10YR to 5Y Value—5 to 7

Chroma—2 to 4

Texture—fine sandy loam, loam, silty clay loam, or clay loam

Sodium adsorption ratio—0 to 5

Reaction—neutral to strongly alkaline

#### Btn horizon:

Hue—7.5YR to 5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam, silty clay, clay loam, or

Sodium adsorption ratio—15 to 30

Reaction—moderately alkaline to very strongly alkaline

#### Bkn and Bkny horizons:

Hue-7.5YR to 2.5Y

Value-5 or 6

Chroma—2 to 4

Texture—silty clay loam, silty clay, clay loam, or clay

Sodium adsorption ratio—10 to 30

Reaction—moderately alkaline to very strongly alkaline

## **Ascalon Series**

Depth class: Very deep Drainage class: Well drained Parent material: Eolian deposits Landform: Hills and plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 9 percent MLRA: 67 and 69

Mean annual precipitation: 13 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

### **Typical Pedon**

Ascalon sandy loam, 3 to 5 percent slopes, about 185 feet east and 330 feet south of the northwest corner of sec. 20, T. 12 S., R. 56 W.

Ap—0 to 4 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; few fine roots; neutral; clear smooth boundary.

Bt1—4 to 7 inches; brown (10YR 4/3) sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and moderately plastic; few fine roots; neutral; clear smooth boundary.

Bt2—7 to 15 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, friable, moderately sticky and moderately plastic; few fine roots; slightly alkaline; clear smooth boundary.

Bk1—15 to 29 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; very few fine roots; common medium masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—29 to 41 inches; very pale brown (10YR 7/3) very fine sandy loam, pale brown (10YR 6/3) moist; weak course prismatic structure parting to weak medium subangular blocky; slightly hard, very friable, moderately sticky and slightly plastic; very few fine roots; many very fine pores; common

medium masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk3—41 to 60 inches; very pale brown (10 7/3) very fine sandy loam, pale brown (10 YR 6/3) moist; weak coarse prismatic structure parting to weak medium subangular blocky; slightly hard, very friable, moderately sticky and moderately plastic; very few fine roots; many very fine pores; few fine masses of calcium carbonate; strongly effervescent; moderately alkaline.

## Range in Characteristics

Depth to calcium carbonate: 8 to 30 inches

Ap horizon:

Hue—10YR or 2.5Y

Value—4 or 5, 2 or 3 moist

Chroma—2 or 3

Texture—sandy loam or fine sandy loam

Reaction—neutral or slightly alkaline

Bt horizon:

Hue-7.5YR to 2.5Y

Value—4 to 6, 3 or 4 moist

Chroma-2 to 4

Texture—sandy loam, loam, sandy clay loam, or

clay loam

Reaction—neutral to moderately alkaline

Bk horizon:

Hue—10YR or 2.5Y

Value—6 or 7

Chroma-2 to 4

Texture—fine sandy loam, very fine sandy loam,

loam, or sandy clay loam

Reaction—moderately alkaline or strongly

alkaline

## **Bacid Series**

Depth class: Very deep Drainage class: Well drained

Parent material: Loess Landform: Plains

Elevation: 4,400 to 6,000 feet

Slope: 0 to 2 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Bacid silt loam, 0 to 2 percent slopes, about 1,954 feet

east and 105 feet north of the southwest corner of sec. 34, T. 17 S., R. 52 W.

- Ap—0 to 4 inches; brown (10YR 5/3) silt loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- Bt1—4 to 6 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; many fine roots; few faint clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Bt2—6 to 11 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate fine and medium prismatic structure parting to moderate fine and medium angular blocky; very hard, very firm, very sticky and very plastic; many fine roots; common distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Btk1—11 to 15 inches; pale brown (10YR 6/3) silty clay, brown (10YR 5/3) moist; moderate medium prismatic structure parting to moderate medium angular blocky; very hard, very firm, very sticky and very plastic; many fine roots; few distinct clay films on faces of peds; few fine and medium masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.
- Btk2—15 to 21 inches; pale brown (10YR 6/3) silty clay, dark grayish brown (10YR 4/2) moist; weak medium prismatic structure parting to moderate medium subangular blocky; very hard, very firm, very sticky and very plastic; many fine roots; common very fine pores; few fine masses of calcium carbonate; violently effervescent; moderately alkaline; clear wavy boundary.
- Bk1—21 to 33 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium and coarse prismatic structure parting to weak medium and coarse subangular blocky; hard, firm, very sticky and moderately plastic; few fine roots; few very fine pores; few fine masses of calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.
- Bk2—33 to 60 inches; very pale brown (10YR 7/3) silty clay loam, pale brown (10YR 6/3) moist; weak coarse prismatic structure parting to weak medium and coarse subangular blocky; soft, friable, moderately sticky and moderately plastic; few very fine roots; common very fine pores; many

fine masses of calcium carbonate; violently effervescent; moderately alkaline.

## Range in Characteristics

Some pedons have a C horizon.

#### A horizon:

Hue-10YR

Value—4 to 6, 3 or 4 moist

Chroma—2 or 3
Texture—silt loam

Reaction—neutral to moderately alkaline

#### Bt horizon:

Hue-7.5YR to 2.5Y

Value—5 to 7, 4 or 5 moist

Chroma—2 to 4

Texture—silty clay loam, silty clay, or clay Reaction—neutral to moderately alkaline

#### Btk horizon:

Hue-7.5YR to 2.5Y

Value—5 to 7, 4 or 5 moist

Chroma—2 to 4

Texture—silty clay loam, silty clay, or clay

Calcium carbonate equivalent—5 to 15 percent

Reaction—moderately alkaline or strongly alkaline

#### Bk horizon:

Hue—10YR or 2.5Y

Value—5 to 7, 4 to 6 moist

Chroma—2 to 4

Texture—silt loam or silty clay loam

Calcium carbonate equivalent—5 to 15 percent

Reaction—moderately alkaline or strongly

alkaline

#### **Bankard Series**

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Bankard-Glenberg complex, 0 to 3 percent slopes, occasionally flooded, in the northwest quarter of the southeast quarter of sec. 35, T. 10 S., R. 55 W.

A—0 to 5 inches; grayish brown (10YR 5/2) loamy sand, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; slightly alkaline; clear smooth boundary.

Bw—5 to 13 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; slightly alkaline.

Bk—13 to 60 inches; light brownish gray (10YR 6/2) loamy sand, dark grayish brown (10YR 4/2) moist; single grain; hard, very friable, nonsticky and nonplastic; very few fine masses of calcium carbonate; slightly effervescent; slightly alkaline.

### Range in Characteristics

#### A horizon:

Hue—10YR

Value—5, 3 or 4 moist

Chroma—2 or 3

Texture—loamy sand or sandy loam

Reaction—neutral to moderately alkaline

## Bw and Bk horizons:

Hue—10YR

Value—5 or 6, 4 moist

Chroma—2 to 4

Texture—sand or loamy sand

Calcium carbonate equivalent—0 to 5 percent

Reaction—neutral to moderately alkaline

## Bijou Series

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Eolian deposits Landform: Hills, interdunes, or plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 12 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Bijou loamy sand, moist, 1 to 3 percent slopes, about 2,110 feet south and 2,510 feet west of the northeast corner of sec. 3, T. 12 S., R. 54 W.

A—0 to 4 inches; brown (10YR 5/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; neutral; clear smooth boundary.

- AB—4 to 9 inches; brown (10YR 5/3) loamy sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; loose, nonsticky and nonplastic; neutral; gradual wavy boundary.
- Bt1—9 to 17 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; slightly alkaline; gradual wavy boundary.
- Bt2—17 to 36 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; moderate coarse prismatic structure parting to weak coarse subangular blocky; hard, friable, moderately sticky and moderately plastic; slightly alkaline; clear wavy boundary.
- BC—36 to 50 inches; olive brown (2.5Y 6/6) loamy sand, light olive yellow (2.5Y 5/6) moist; weak coarse prismatic structure; slightly hard, loose, nonsticky and nonplastic; slightly alkaline; gradual wavy boundary.
- C—50 to 60 inches; yellow (2.5Y 7/6) loamy sand, olive yellow (2.5Y 6/6) moist; single grain; nonsticky and nonplastic; slightly alkaline.

## Range in Characteristics

Depth to calcium carbonate: 40 to greater than 60 inches

#### A horizon:

Hue—10YR

Value—5 or 6. 3 or 4 moist

Chroma—2 or 3

Texture—loamy sand or sandy loam Reaction—neutral or slightly alkaline

## Bt horizon:

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—coarse sandy loam or sandy loam

Reaction—neutral or slightly alkaline

## C horizon:

Hue-10YR or 2.5Y

Value—6 or 7, 5 or 6 moist

Chroma—3 to 6

Texture—sand, loamy coarse sand, or loamy sand

Reaction—neutral to moderately alkaline

## Blakeland Series

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Eolian deposits

Landform: Dunes

Elevation: 4,400 to 6,000 feet

Slope: 3 to 12 percent

MLRA: 67

Mean annual precipitation: 14 to 16 percent Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Blakeland loamy sand, 3 to 12 percent slopes, about 680 feet east and 2,440 feet south of the northwest corner of sec. 32, T. 9 S., R. 56 W.

- A—0 to 4 inches; grayish brown (10YR 5/2) loamy sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; nonsticky and nonplastic; many fine roots; few very fine pores; neutral; diffuse smooth boundary.
- AC—4 to 12 inches; grayish brown (10YR 5/2) loamy sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many fine roots; few very fine pores; neutral; clear smooth boundary.
- C1—12 to 30 inches; pale brown (10YR 6/3) loamy sand, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common fine roots; few very fine pores; neutral; clear smooth boundary.
- C2—30 to 60 inches; very pale brown (10YR 7/3) loamy sand, pale brown (10YR 6/3) moist; massive; nonsticky and nonplastic; few fine roots; slightly alkaline.

## **Range in Characteristics**

#### A horizon:

Hue-10YR

Value—4 or 5, 2 or 3 moist

Chroma—2 or 3

Texture—loamy sand

Reaction—neutral or slightly alkaline

## AC horizon:

Hue—10YR

Value—4 or 5, 2 or 3 moist

Chroma—2 or 3

Texture—loamy sand

Reaction—neutral or slightly alkaline

#### C horizon:

Hue-10YR

Value—6 or 7, 4 to 6 moist

Chroma—2 to 5

Texture—loamy sand

Reaction—neutral or slightly alkaline

## **Bresser Series**

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Hills

Elevation: 4,400 to 6,000 feet

Slope: 1 to 5 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Bresser sandy loam, 1 to 5 percent slopes, about 1,100 feet south and 1,820 feet west of the northeast corner of section 25, T. 16 S., R. 59 W.

- A—0 to 3 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; few very fine pores; neutral; clear smooth boundary.
- Bt1—3 to 8 inches; brown (10YR 4/3) sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; common fine roots; few very fine pores; neutral; clear smooth boundary.
- Bt2—8 to 13 inches; brown (10YR 5/3) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; very hard, friable, moderately sticky and moderately plastic; common fine roots; few very fine pores; neutral; clear smooth boundary.
- BC—13 to 19 inches; pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; extremely hard, firm, slightly sticky and nonplastic; common fine roots; few very fine pores; slightly alkaline; clear smooth boundary.
- C1—19 to 28 inches; light yellowish brown (10YR 6/4) loamy coarse sand, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; few very fine pores; neutral; clear smooth boundary.
- C2—28 to 47 inches; pale brown (10YR 6/3) loamy coarse sand, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; few very fine pores; neutral; clear smooth boundary.
- C3—47 to 60 inches; pale brown (10YR 6/3) loamy

coarse sand, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; few very fine pores; slightly effervescent; slightly alkaline.

### Range in Characteristics

Depth to calcium carbonate: 40 to greater than 60

inches

A horizon:

Hue—10YR

Value—4 or 5, 2 or 3 moist

Chroma—2 or 3
Texture—sandy loam
Reaction—neutral

Bt horizon:

Hue—10YR

Value—4 to 6, 3 to 5 moist

Chroma—2 or 3

Texture—sandy clay loam

Reaction—neutral or slightly alkaline

C horizon:

Hue—10YR

Value—6 or 7, 5 or 6 moist

Chroma—3 to 5

Texture—loamy coarse sand

Reaction—neutral to moderately alkaline

## Campo Series

Depth class: Very deep Drainage class: Well drained Parent material: Loess

Landform: Plains

Elevation: 4,400 to 6,000 feet

Slope: 0 to 2 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual temperature: 47 to 53 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Campo silt loam, 0 to 2 percent slopes, about 100 feet south and 335 feet west of the northeast corner of sec. 30, T. 16 S., R. 52 W.

- Ap—0 to 3 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; slightly alkaline; abrupt smooth boundary.
- Bt—3 to 10 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; moderate medium prismatic

structure parting to moderate very fine subangular blocky; hard, firm, very sticky and moderately plastic; many faint clay films on faces of peds; slightly alkaline; abrupt smooth boundary.

- Btk—10 to 15 inches; pale brown (10YR 6/3) silty clay, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to moderate fine angular blocky; hard, firm, moderately sticky and moderately plastic; common distinct clay films on faces of peds; common medium masses of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.
- Bk1—15 to 25 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common medium masses of calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.
- Bk2—25 to 60 inches; light yellowish brown (10YR 6/4) silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine masses of calcium carbonate; violently effervescent; moderately alkaline.

### Range in Characteristics

## Ap horizon:

Hue—10YR

Value—5 or 6. 3 or 4 moist

Chroma—2 or 3

Texture—silt loam

Reaction—neutral or slightly alkaline

### Bt horizon:

Hue—10YR

Value—5 or 6, 4 or 5 moist

Chroma-3 or 4

Texture—silty clay loam, silty clay, clay loam, or clay

Reaction—slightly alkaline

## Btk and Bk horizons:

Hue—10YR

Value—5 or 6. 3 to 5 moist

Chroma—3 or 4

Texture—silty clay loam or silty clay Reaction—moderately alkaline

## Lower Bk horizon:

Hue—10YR

Value—5 or 6

Chroma—3 or 4

Texture—loam or silt loam

Reaction—moderately alkaline

## Canyon Series

Depth class: Shallow

Drainage class: Well drained

Parent material: Residuum from sandstone

Landform: Hills

Elevation: 4,400 to 6,000 Slope: 3 to 60 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Canyon gravelly loam in an area of Canyon-Rock outcrop complex, 5 to 60 percent slopes, about 150 feet south and 1,900 feet east of the northwest corner of sec. 3, T. 6 S., R. 45 W.; USGS Idalia, Colorado, SW topographic quadrangle; lat. 39 degrees 33 minutes 53 seconds N. and long. 102 degrees 25 minutes 18 seconds W.

- A—0 to 3 inches; brown (10YR 5/3) gravelly loam, brown (10YR 4/3) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; strongly effervescent; 15 percent gravel; moderately alkaline; clear smooth boundary.
- AC—3 to 7 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; strongly effervescent; moderately alkaline; clear smooth boundary.
- C—7 to 10 inches; very pale brown (10YR 8/2) loam, grayish brown (10YR 5/2) moist; massive; hard, very friable, nonsticky and nonplastic; violently effervescent; 5 percent fine gravel; moderately alkaline; abrupt wavy boundary.
- Cr—10 to 14 inches; weakly cemented calcareous sandstone.

## **Range in Characteristics**

Depth to paralithic contact: 10 to 18 inches Depth to calcareous material: 0 to 6 inches Rock fragment content: 0 to 20 percent

#### A horizon:

Hue—10YR

Value—4 to 6 dry, 3 to 5 moist

Chroma—2 or 3

Texture—gravelly loam

Calcium carbonate equivalent—0 to 10

percent

Reaction—slightly or moderately alkaline

#### AC horizon:

Hue—10YR

Value—5 or 6 dry, 4 or 5 moist

Chroma—2 or 3

Texture—loam or gravelly loam

Calcium carbonate equivalent—1 to 10 percent

Reaction—moderately alkaline

#### C horizon:

Hue—10YR

Value—6 to 8 dry, 5 or 6 moist

Chroma-2 to 4

Texture—gravelly loam or loam

Calcium carbonate equivalent—1 to 10 percent

Reaction—moderately alkaline

## Colby Series

Depth class: Very deep Drainage class: Well drained Parent material: Loess Landform: Hills and plains Elevation: 4,400 to 6,000 feet

Slope: 1 to 12 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 53 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Colby silt loam, dry, 3 to 12 percent slopes, about 60 feet west and 264 feet south of the northeast corner of sec. 11, T. 9 S., R. 55 W.

Ap—0 to 5 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; violently effervescent; moderately alkaline; abrupt smooth boundary.

Bk1—5 to 16 inches; light brownish gray (10YR 6/2) silt loam, brown (10YR 5/3) moist; weak medium and coarse prismatic structure parting to weak medium and coarse subangular blocky; slightly hard, firm, moderately sticky and slightly plastic; many very fine and fine roots; common fine masses of calcium carbonate; violently effervescent; moderately

alkaline; clear smooth boundary.

Bk2—16 to 32 inches; light gray (10YR 7/2) silt loam, light brownish gray (10YR 6/2) moist; massive; soft, friable, moderately sticky and slightly plastic; few very fine roots; common fine masses of calcium carbonate; violently effervescent; moderately alkaline; gradual smooth boundary.

Bk3—32 to 60 inches; pale brown (10YR 6/3) silt loam, light brownish gray (10YR 6/2) moist; massive; soft, friable, slightly sticky and slightly plastic; few very fine roots; common fine masses of calcium carbonate; violently effervescent; moderately alkaline.

## Range in Characteristics

#### Ap horizon:

Hue—10YR

Value—5 or 6, 3 to 5 moist

Chroma—2 or 3 Texture—silt loam

Reaction—slightly alkaline or moderately alkaline

#### Bk horizon:

Hue—10YR

Value—6 or 7, 4 or 5 moist

Chroma-2 or 3

Texture—silt loam or silty clay loam

Reaction—slightly alkaline or moderately alkaline

#### Lower Bk horizon:

Hue-10YR or 2.5Y

Value-6 to 8, 5 or 6 moist

Chroma—2 or 3 Texture—silt loam

Reaction—moderately alkaline or strongly alkaline

## Firstview Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium

Landform: Drainageways and fans Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 53 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Firstview loamy sand, 0 to 3 percent slopes, about 1,250 feet east and 1,900 feet north of the southwest corner of sec. 1, T. 13 S., R. 54 W.

E—0 to 4 inches; grayish brown (10YR 5/2) loamy sand, dark grayish brown (10YR 4/2) moist; strong medium granular structure; loose, nonsticky and nonplastic; common very fine and fine roots; moderately alkaline; abrupt smooth boundary.

Btn—4 to 10 inches; light brownish gray (10YR 6/2) sandy clay loam, brown (10YR 5/3) moist; strong

very fine columnar structure parting to moderate very fine prismatic; hard, firm, moderately sticky and slightly plastic; common very fine and fine roots; few distinct clay films on faces of peds; few fine masses of salts; strongly alkaline; clear smooth boundary.

Btkn1—10 to 15 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and slightly plastic; few very fine and fine roots; few very fine and fine pores; few faint clay films; few fine and medium masses of calcium carbonate; strongly effervescent; few fine masses of salts; very strongly alkaline; clear smooth boundary.

Btkn2—15 to 20 inches; grayish brown (10YR 5/2) sandy clay loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few faint clay films on faces of peds; common fine and medium masses of calcium carbonate; strongly effervescent; few fine masses of salts; very strongly alkaline; clear smooth boundary.

Btkn3—20 to 28 inches; grayish brown (10YR 5/2) clay, brown (10YR 4/3) moist; weak fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine pores; few faint clay films on faces of peds; many fine and medium masses of calcium carbonate; strongly effervescent; few fine masses of salt; very strongly alkaline; clear smooth boundary.

Bk1—28 to 35 inches; grayish brown (10YR 5/2) sandy clay loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; hard, firm, moderately sticky and slightly plastic; few very fine and fine roots; few very fine pores; many fine and medium masses of calcium carbonate; strongly effervescent; strongly alkaline; clear smooth boundary.

Bk2—35 to 60 inches; light gray (10YR 7/2) loamy sand, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; few very fine pores; many fine and medium masses of calcium carbonate; strongly effervescent; strongly alkaline.

#### **Range in Characteristics**

A or E horizon:

Hue—10YR

Value—4 to 6, 3 to 5 moist

Chroma—2 or 3

Texture—loamy sand or sandy loam Reaction—neutral to moderately alkaline

#### Btn horizon:

Hue-10YR or 2.5Y

Value—4 to 6, 4 or 5 moist

Chroma—2 to 4

Texture—sandy clay loam, clay loam, or loam Sodium adsorption ratio—greater than 13 Reaction—moderately alkaline to very strongly alkaline

#### Btkn horizon:

Hue-10YR or 2.5Y

Value—5 to 7, 4 to 6 moist

Chroma—1 to 4

Texture—sandy clay loam, clay loam, or clay Sodium adsorption ratio—greater than 13 Reaction—moderately alkaline to very strongly alkaline

#### Bk horizon:

Hue-10YR or 2.5Y

Value—5 to 7, 4 to 6 moist

Chroma—1 to 4

Texture—loamy sand, sandy loam, sandy clay loam, or clay loam

Sodium adsorption ratio—0 to 10

Reaction—moderately alkaline to very strongly alkaline

## Fort Collins Series

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Hills and plains Elevation: 4,400 to 6,000 feet Slope: 1 to 25 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 53 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Fort Collins loam, 1 to 3 percent slopes, about 57 feet east and 1,280 feet south of the northwest corner of sec. 21, T. 12 S., R. 52 W.

A—0 to 3 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; neutral; clear smooth boundary.

BA-3 to 7 inches; brown (10YR 5/3) loam, dark grayish brown (10YR 4/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and moderately plastic; few very fine and fine roots; neutral; clear smooth boundary.

- Bt—7 to 13 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; strong fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; many faint clay films on faces of peds; neutral; clear smooth boundary.
- Bk1—13 to 18 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; very few very fine roots; few very fine pores; common fine nodules of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.
- Bk2—18 to 30 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; very few very fine roots; few very fine pores; many fine nodules of calcium carbonate; violently effervescent; strongly alkaline; clear smooth boundary.
- Bk3—30 to 60 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 5/3) moist; massive; few very fine roots; very few very fine pores; common fine masses of calcium carbonate; violently effervescent; 2 percent fine gravel; moderately alkaline.

## Range in Characteristics

 Rock fragments range from 0 to 5 percent throughout.

#### A horizon:

Hue—10YR or 2.5Y Value—5 or 6, 3 to 5 moist Chroma—2 or 3 Texture—loam Reaction—neutral

#### Bt horizon:

Hue—10YR
Value—5 or 6, 4 or 5 moist
Chroma—2 or 3
Texture—clay loam
Reaction—neutral

#### Bk horizon:

Hue—10YR
Value—6 or 7, 5 or 6 moist
Chroma—3 or 4, 3 to 6 moist
Texture—loam or clay loam
Calcium carbonate equivalent—less than 15
percent
Reaction—moderately alkaline or strongly alkaline

Lower Bk horizon:

Hue—10YR or 2.5Y
Value—6 or 7, 5 or 6 moist
Chroma—3 or 4, 3 to 6 moist
Texture—loam or silt loam
Calcium carbonate equivalent—less than 15
percent
Reaction—moderately alkaline or strongly alkaline

## **Fort Series**

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Hills and plains Elevation: 4,400 to 6,000 feet Slope: 1 to 25 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual temperature: 47 to 53 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Fort loam, 1 to 3 percent slopes, about 1,400 feet north and 1,900 feet east of the southwest corner of sec. 24, T. 15 S., R. 54 W.

- A—0 to 2 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate medium granular structure; slightly hard, very friable, moderately sticky and slightly plastic; many fine roots; slightly alkaline; abrupt smooth boundary.
- AB—2 to 5 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and slightly plastic; many fine roots; neutral; clear smooth boundary.
- Bt—5 to 9 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; strong medium subangular blocky structure; hard, friable, moderately sticky and slightly plastic; few fine roots; common distinct clay films on faces of peds and in pores; slightly effervescent; slightly alkaline; gradual irregular boundary.
- Btk1—9 to 19 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate medium prismatic structure parting to moderate fine subangular blocky; very hard, friable, moderately sticky and slightly plastic; few very fine pores; few faint clay films on faces of peds; few fine masses of calcium carbonate; violently effervescent; strongly alkaline; clear wavy boundary.

Btk2—19 to 34 inches; pale brown (10YR 6/3) clay

loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; very hard, friable, moderately sticky and slightly plastic; common very fine pores; few faint clay films in root channels and pores; many medium masses of calcium carbonate; violently effervescent; very strongly alkaline; gradual irregular boundary.

Bk1—34 to 43 inches; very pale brown (10YR 7/3) clay loam, pale brown (10YR 6/3) moist; massive; very hard, friable, moderately sticky and slightly plastic; common very fine pores; few fine masses of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.

Bk2—43 to 60 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; massive; very hard, friable, moderately sticky and slightly plastic; few very fine pores; few fine masses of calcium carbonate; violently effervescent; moderately alkaline.

## Range in Characteristics

#### A horizon:

Hue—10YR

Value—4 to 6, 3 or 4 moist

Chroma—2 to 4

Texture—loam

Reaction—neutral or slightly alkaline

#### Bt horizon:

Hue—10YR

Value—5 or 6, 4 or 5 moist

Chroma—2 to 4

Texture—clay loam

Reaction—neutral or slightly alkaline

## Btk horizon:

Hue—10YR

Value—5 or 6

Chroma—3 or 4

Texture—loam or clay loam

Calcium carbonate equivalent—5 to 15 percent Reaction—slightly alkaline to very strongly alkaline

#### Bk horizon:

Hue—10YR

Value—6 or 7, 5 or 6 moist

Chroma—3 or 4

Texture—loam, silt loam, silty clay loam, or clay loam

Calcium carbonate equivalent—5 to 15 percent Reaction—moderately alkaline or strongly alkaline

## **Glenberg Series**

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Bankard-Glenberg complex, 0 to 3 percent slopes, occasionally flooded, about 2,200 feet south and 2,550 feet west of the northeast corner of sec. 35, T. 10 S., R. 55 W.

Ap—0 to 3 inches; grayish brown (10YR 5/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; neutral; clear smooth boundary.

AB—3 to 8 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; slightly alkaline; clear smooth boundary.

Bk1—8 to 24 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine masses of calcium carbonate; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk2—24 to 32 inches; grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine masses of calcium carbonate; slightly alkaline; clear smooth boundary.

Bk3—32 to 60 inches; light brownish gray (10YR 6/2) loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; many fine masses of calcium carbonate; moderately alkaline.

#### Range in Characteristics

## A horizon:

Hue-10YR

Value-4 or 5, 3 or 4 moist

Chroma—2 or 3

Texture—fine sandy loam, sandy loam, or loamy sand

Reaction—neutral to moderately alkaline

### AB horizon:

Hue—10YR

Value-5 or 6, 4 or 5 moist

Chroma-2 to 4

Texture—fine sandy loam or sandy loam

Reaction—slightly alkaline or moderately alkaline

Bk horizon:

Hue-10YR

Value-5 or 6, 4 or 5 moist

Chroma—2 to 4

Texture—fine sandy loam or sandy loam, loamy

sand in the lower part

Reaction—slightly alkaline or moderately alkaline

#### Haverson Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

### **Typical Pedon**

Haverson loam, 0 to 3 percent slopes, rarely flooded, about 1,700 feet north and 1,900 feet west of the southeast corner of sec. 13, T. 15 S., R. 53 W.

- A1—0 to 5 inches; brown (10YR 4/3) loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, very friable; common very fine and fine roots throughout; few very fine and fine pores; slightly effervescent; slightly alkaline; gradual irregular boundary.
- A2—5 to 10 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak fine granular structure; slightly hard, very friable; few very fine and fine roots throughout; few very fine and fine pores; slightly effervescent; slightly alkaline; gradual irregular boundary.
- A3—10 to 15 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable; few very fine and fine roots throughout; few very fine and fine pores; slightly effervescent; slightly alkaline; gradual irregular boundary.
- C1—15 to 20 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; massive; slightly hard, very friable; very few very fine and fine roots throughout; few very fine and fine pores; slightly effervescent; moderately alkaline; gradual irregular boundary.

- C2—20 to 25 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable; very few very fine and fine roots throughout; few very fine and fine pores; slightly effervescent; moderately alkaline; gradual irregular boundary.
- C3—25 to 30 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable; very few very fine and fine roots throughout; few very fine and fine pores; strongly effervescent; strongly alkaline; gradual irregular boundary.
- C4—30 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable; very few very fine and fine roots throughout; few very fine and fine pores; strongly effervescent; very strongly alkaline.

## Range in Characteristics

Depth to secondary calcium carbonate: 5 to 60 inches

A horizon:

Hue—10YR

Value—4 or 5, 3 or 4 moist

Chroma-2 or 3

Texture—loam, sandy clay loam, or clay loam Reaction—slightly alkaline or moderately alkaline

C horizon:

Hue-10YR

Value—5 or 6, 3 or 4 moist

Chroma—2 or 3

Texture—sand, loamy sand, sandy loam, loam, or

clay loam

Reaction—moderately alkaline to very strongly alkaline

## Haversid Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Haversid silt loam, 0 to 3 percent slopes, about 2,300 feet south and 700 feet west of the northeast corner of sec. 29, T. 33 S., R. 61 W.

- A—0 to 14 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium platy structure parting to weak very fine granular; slightly hard, friable, slightly sticky and slightly plastic; violently effervescent; moderately alkaline; clear smooth boundary.
- Bn1—14 to 32 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak coarse platy structure parting to weak medium subangular blocky; hard, friable, slightly sticky and slightly plastic; few crystals of sodium salt; violently effervescent; moderately alkaline; clear smooth boundary.
- Bn2—32 to 53 inches; light brownish gray (10YR 6/2) stratified loam and clay loam, dark grayish brown (10YR 4/2) moist; weak coarse platy structure; very hard, firm, slightly sticky and slightly plastic; common fine crystals of sodium salt; violently effervescent; moderately alkaline; gradual smooth boundary.
- C—53 to 60 inches; pale brown (10YR 6/3) stratified loam and fine sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; violently effervescent; moderately alkaline.

#### Range in Characteristics

Depth to bedrock: 60 or more inches Depth to sodium salts: 10 to 40 inches

#### C horizon:

Texture—stratified silt loam, loam, clay loam, or fine sandy loam

Clay content—18 to 35 percent

Salinity—slightly saline or moderately saline; estimated sodium content ranges from 1 to 10 percent

Reaction—moderately alkaline

## Haxtun Series

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Drainageways Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Haxtun-Olnest loamy sands, 0 to 3 percent slopes, about 130 feet west and 2,220 feet south of the northeast corner of sec. 7, T. 14 S., R. 55 W.

- Ap—0 to 4 inches; brown (10YR 5/3) loamy sand, dark brown (10YR 3/3) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; slightly effervescent; neutral; clear smooth boundary.
- BA—4 to 17 inches; brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; slightly effervescent; neutral; clear wavy boundary.
- Bt—17 to 37 inches; brown (10YR 5/3) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to weak medium subangular blocky; hard, firm, moderately sticky and moderately plastic; few faint clay films on faces of peds; slightly effervescent; neutral; clear irregular boundary.
- Btb—37 to 44 inches; grayish brown (10YR 5/2) clay loam, very dark gray (10YR 3/1) moist; weak coarse prismatic structure parting to weak medium subangular blocky; very hard, firm, very sticky and very plastic; few faint clay films on faces of peds; slightly effervescent; few fine faint yellowish brown (10YR 5/6) redoximorphic concentrations; neutral; clear wavy boundary.
- Btkyb—44 to 60 inches; grayish brown (10YR 5/2) silt loam, dark gray (10YR 4/1) moist; weak coarse prismatic structure parting to weak medium subangular blocky; very hard, firm, slightly sticky and slightly plastic; few faint clay films on faces of peds; many medium masses of calcium carbonate; violently effervescent; few fine masses of gypsum; few fine faint yellowish brown (10YR 5/6) redoximorphic concentrations; moderately alkaline.

## **Range in Characteristics**

Ap horizon:

Hue—10YR

Value—4 to 6, 3 moist

Chroma—2 or 3

Texture—loamy sand or sandy loam Reaction—neutral or slightly alkaline

AB or BA horizon:

Hue-10YR

Value—4 to 6, 3 moist

Chroma—2 or 3

Texture—loamy sand or sandy loam Reaction—neutral or slightly alkaline

#### Bt horizon:

Hue—10YR

Value—4 or 5, 3 moist

Chroma—2 or 3

Texture—sandy loam or sandy clay loam Reaction—neutral or slightly alkaline

#### Btb horizon:

Hue-10YR

Value—5 or 6, 3 to 5 moist Chroma—2 or 3, 1 to 3 moist

Texture—clay loam or sandy clay loam Reaction—neutral or slightly alkaline

## Btkyb horizon:

Hue-10YR

Value—5 to 8, 4 to 6 moist Chroma—2 to 4, 1 to 4 moist

Texture—silt loam, sandy loam, loam, sandy clay

loam, or clay loam

Reaction—neutral to moderately alkaline

#### Karval Series

Depth class: Very deep

Drainage class: Excessively drained

Parent material: Alluvium

Landform: Hills

Elevation: 4,400 to 6,000 feet Slope: 5 to 25 percent

MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Vonid-Karval-Midway complex, 5 to 25 percent slopes, the northeast quarter of the northwest quarter of sec. 26, T. 16 S., R. 55 W.

A—0 to 5 inches; light brownish gray (10YR 6/2) gravelly loamy sand, grayish brown (10YR 5/2) moist; moderate medium granular structure; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine white (10YR 8/1) masses of calcium carbonate between peds; very slightly effervescent between peds; 30 percent fine gravel; moderately acid; clear smooth boundary.

AB—5 to 14 inches; pale brown (10YR 6/3) gravelly coarse sand, light brownish gray (10YR 6/2) moist;

weak medium granular structure; slightly hard, very friable, nonsticky and nonplastic; few very fine to medium roots; 20 percent fine gravel; neutral; gradual smooth boundary.

Bk1—14 to 40 inches; light gray (10YR 7/2) gravelly coarse sand, pale brown (10YR 6/3) moist; single grain; few very fine and fine roots; common fine white (10YR 8/1) masses of calcium carbonate; strongly effervescent; 20 percent fine gravel; neutral; gradual smooth boundary.

Bk2—40 to 50 inches; very pale brown (10YR 7/3) gravelly coarse sand, pale brown (10YR 6/3) moist; single grain; many fine white (10YR 8/1) masses of calcium carbonate; very slightly effervescent; 18 percent fine gravel; neutral; gradual smooth boundary.

C—50 to 60 inches; very pale brown (10YR 7/3) sand, light brownish gray (10YR 6/2) moist; single grain; 5 percent fine gravel; neutral.

#### Range in Characteristics

Depth to calcium carbonate: 0 to 40 inches

#### A horizon:

Hue—10YR

Value—4 to 6, 3 to 5 moist

Chroma—2 or 3

Texture—sandy loam, loam, gravelly sandy loam,

or gravelly loamy sand

Rock fragments—5 to 35 percent

Reaction—moderately acid to moderately

alkaline

#### AB horizon:

Hue—7.5YR or 10YR

Value—4 to 7, 4 to 6 moist

Chroma—2 to 4

Texture—gravelly coarse sand, gravelly sand, or

gravelly loamy sand

Rock fragments—15 to 35 percent

Reaction—neutral to moderately alkaline

#### Bk horizon:

Hue—7.5YR or 10YR

Value—4 to 7, 4 to 6 moist

Chroma—2 to 4

Texture—gravelly coarse sand, gravelly sand, or

gravelly loamy sand

Rock fragments—15 to 35 percent

Calcium carbonate equivalent—2 to 5 percent Reaction—neutral to moderately alkaline

## Bk and C horizons below 40 inches:

Hue-7.5YR or 10YR

Value—4 to 7, 4 to 6 moist

Chroma-2 to 4

Texture—coarse sand, sand, loamy sand, gravelly coarse sand, gravelly sand, gravelly loamy sand, gravelly sandy loam, very gravelly sand, very gravelly loamy sand, or very gravelly sandy loam

Rock fragments—5 to 40 percent Calcium carbonate equivalent—0 to 5 percent Reaction—neutral to moderately alkaline

## Keith Series

Depth class: Very deep Drainage class: Well drained Parent material: Loess Landform: Hills and plains Elevation: 4,400 to 6,000 feet Slope: 1 to 10 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Keith silt loam, 1 to 3 percent slopes, northwest quarter of the southwest quarter of sec. 17, T. 7 S., R. 53 W.

- A—0 to 5 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, nonsticky and slightly plastic; slightly alkaline; clear smooth boundary.
- BA—5 to 10 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, nonsticky and slightly plastic; slightly alkaline; clear smooth boundary.
- Bt—10 to 18 inches; brown (10YR 5/3) silty clay loam, dark brown (10YR 3/3) moist; moderate fine prismatic structure parting to strong fine angular blocky; very hard, firm, moderately sticky and moderately plastic; few faint clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Btk—18 to 26 inches; light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 4/3) moist; weak fine prismatic structure parting to moderate fine subangular blocky; hard, firm, slightly sticky and moderately plastic; few faint clay films of faces of peds; few fine masses of calcium carbonate; slightly effervescent; slightly alkaline; clear smooth boundary.

Bk1—26 to 40 inches; light gray (2.5Y 7/2) silt loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine masses of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.

Bk2—40 to 60 inches; pale yellow (2.5Y 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few fine masses of calcium carbonate; violently effervescent; moderately alkaline.

## **Range in Characteristics**

#### A horizon:

Hue—10YR

Value—4 or 5 dry, 3 moist

Chroma—2 or 3 Texture—silt loam

Reaction—neutral or slightly alkaline

#### BA horizon:

Hue-10YR

Value—4 or 5 dry, 3 moist

Chroma-2 or 3

Texture—silt loam or silty clay loam Reaction—neutral or slightly alkaline

#### Bt and Btk horizons:

Hue-10YR

Value—4 to 6 dry, 3 or 4 moist

Chroma—2 to 4

Texture—silty clay loam

Reaction—neutral to moderately alkaline

## Bk horizon:

Hue-2.5Y or 10YR

Value—4 to 7

Chroma-2 to 4

Texture—silt loam

Reaction—slightly alkaline or moderately alkaline

#### Kim Series

Depth class: Very deep

Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Hills and plains Elevation: 4,400 to 6,000 Slope: 1 to 12 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F Frost-free period: 135 to 155 days

## **Typical Pedon**

Kim-Ildefonso complex, 4 to 12 percent slopes, about 1,020 feet south and 2,300 feet east of the northwest corner of sec. 6, T. 33 S., R. 63 W.

- A—0 to 4 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; moderately alkaline; abrupt smooth boundary.
- Bw—4 to 11 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak very fine subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; violently effervescent; moderately alkaline; clear smooth boundary.
- Bk1—11 to 38 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; extremely hard, friable, slightly sticky and slightly plastic; many medium masses of calcium carbonate; violently effervescent; moderately alkaline; gradual smooth boundary.
- Bk2—38 to 60 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few medium masses of calcium carbonate; violently effervescent; moderately alkaline.

#### Range in Characteristics

Texture: Loam, clay loam, or fine sandy loam

Clay content: 18 to 35 percent

Reaction: Slightly alkaline or moderately alkaline

## **Kimst Series**

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Hills and plains Elevation: 4,400 to 6,000 feet Slope: 1 to 12 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Kimst loam, 3 to 12 percent slopes, northwest quarter of the northwest quarter of sec. 22, T. 8 S., R. 53 W.

- Ap—0 to 5 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; strongly effervescent; moderately alkaline; abrupt smooth boundary.
- Bk1—5 to 22 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many fine masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.
- Bk2—22 to 60 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

### Range in Characteristics

Ap horizon:

Hue—10YR

Value-5 or 6, 3 to 5 moist

Chroma-2 or 3

Texture—loam

Reaction—slightly alkaline or moderately

alkaline

Bk horizon:

Hue—10YR

Value—5 or 6, 4 to 6 moist

Chroma-2 to 4

Texture—loam, clay loam, or sandy clay loam Reaction—slightly alkaline to strongly alkaline

Lower Bk horizon:

Hue-2.5Y or 10YR

Value—5 to 7, 5 or 6 moist

Chroma—2 to 4

Texture—loam, clay loam, or sandy clay loam Reaction—slightly alkaline to strongly alkaline

#### Las Animas Series

Depth class: Very deep

Drainage class: Poorly drained Parent material: Alluvium Elevation: 4,400 to 6,000 feet Landform: Flood plains Slope: 0 to 3 percent MLRA: 67 and 69

Mean Annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Las Animas loam, 0 to 1 percent slopes, Bent County, Colorado; northwest quarter of sec. 6, T. 23 S., R. 51 W.

- A—0 to 6 inches; gray (N 5/0) sandy loam, dark gray (N 4/0) moist; moderate fine granular structure; soft, very friable; strongly effervescent; moderately alkaline; clear smooth boundary.
- Bg—6 to 10 inches; light brownish gray (2.5Y 6/2) stratified sandy loam, loamy sand, and loam; grayish brown (2.5Y 5/2) moist; weak coarse subangular blocky structure parting to weak fine granular; slightly hard, very friable; strongly effervescent; common medium prominent yellowish brown (10YR 5/4) moist redoximophic concentrations; moderately alkaline; gradual smooth boundary.
- Bkyg—10 to 60 inches; light brownish gray (2.5Y 6/2) stratified sandy loam, loamy sand, and loam; grayish brown (2.5Y 5/2) moist; massive; soft, very friable; few fine masses of calcium carbonate; strongly effervescent; few fine crystals of gypsum; many coarse prominent light olive brown (2.5Y 5/6) moist redoximorphic concentrations and gray (N 5/0) moist redoximorphic depletions; moderately alkaline.

## Range in Characteristics

#### A horizon:

Hue—5Y to 7.5YR, or is neutral

Value—4 to 6. 3 or 4 moist

Chroma—0 to 2

Texture—sandy loam or loamy sand

Reaction—slightly alkaline or moderately alkaline

## Bg and Bkyg horizons:

Hue—5Y to 7.5YR, or is neutral

Value—3 to 7

Chroma-0 to 3

Texture—stratified loamy sand, fine sandy loam,

sandy loam, or loam

Reaction—slightly alkaline to strongly alkaline

## **Limon Series**

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches

Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F Frost-free period: 135 to 155 days

### **Typical Pedon**

Limon clay, 0 to 3 percent slopes, rarely flooded, about 1,742 feet west and 343 feet north of the southeast corner of sec. 12, T. 17 S., R. 58 W.

- A—0 to 6 inches; light brownish gray (10YR 6/2) clay, brown (10YR 4/3) moist; weak fine granular structure; very hard, very firm, very sticky and very plastic; slightly effervescent; strongly alkaline; clear smooth boundary.
- Bky—6 to 23 inches; grayish brown (10YR 5/2) clay, brown (10YR 5/3) moist; weak coarse prismatic structure parting to weak medium subangular blocky; very hard, very firm, very sticky and very plastic; few fine masses of calcium carbonate; common fine masses of gypsum; moderately alkaline; gradual smooth boundary.
- By1—23 to 38 inches; yellowish brown (10YR 5/4) clay, light olive brown (2.5Y 5/4) moist; massive; extremely hard, very firm, very sticky and very plastic; few fine masses of gypsum; strongly alkaline; gradual wavy boundary.
- By2—38 to 49 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/4) moist; massive; extremely hard, very firm, very sticky and very plastic; few fine masses of gypsum; strongly alkaline; gradual wavy boundary.
- By3—49 to 60 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/4) moist; massive; extremely hard, very firm, very sticky and very plastic; common fine masses of gypsum; moderately alkaline.

## **Range in Characteristics**

#### A horizon:

Hue-2.5Y or 10YR

Value—4 to 6

Chroma—2 or 3

Texture—loam, clay loam, or clay

Reaction—slightly alkaline to strongly alkaline

#### Bkv horizon:

Hue-2.5Y or 10YR

Value-4 to 6

Chroma—1 to 3

Texture—clay loam, silty clay loam, or clay Reaction—slightly alkaline to strongly alkaline

## By horizon:

Hue-5Y, 2.5Y, or 10YR

Value—4 to 6

Chroma—2 to 4

Texture—clay loam, silty clay loam, or clay Reaction—slightly alkaline to strongly alkaline

### Manzanola Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium

Landform: Drainageways and fans Elevation: 4,400 to 6,000 feet

Slope: 1 to 5 percent

MLRA: 69

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Manzanola clay loam, 0 to 3 percent slopes, Crowley County, Colorado; 0.15 mile north of the southeast corner of sec. 7, T. 21 S., R. 55 W.

- A—0 to 5 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; strong very fine granular structure; soft, very friable, slightly sticky and slightly plastic; slightly effervescent; slightly alkaline; clear smooth boundary.
- Bt1—5 to 8 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few distinct clay films on faces of peds and in root channels and pores; slightly effervescent; moderately alkaline; clear smooth boundary.
- Bt2—8 to 20 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; weak medium prismatic structure parting to medium and fine angular blocky; slightly hard, friable, sticky and plastic; few prominent clay films on faces of peds and in root channels and pores; slightly effervescent; moderately alkaline; gradual wavy boundary.
- Btk—20 to 30 inches; light yellowish brown (2.5Y 6/3) clay loam, light olive brown (2.5Y 5/3) moist; weak medium prismatic structure parting to medium subangular blocky; hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds and in root channels and pores; common masses and concretions of calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.
- Bk—30 to 60 inches; pale yellow (2.5Y 7/3) clay loam, light olive brown (2.5Y 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; common fine and medium masses and concretions of

calcium carbonate; strongly effervescent; moderately alkaline.

## **Range of Characteristics**

A horizon:

Hue—7.5YR to 5Y

Value—4 to 7, 3 to 6 moist

Chroma—1 to 4

Texture—clay loam or silty clay loam

Reaction—slightly alkaline to strongly alkaline

Bt horizon:

Hue—7.5YR to 5Y

Value—5 to 7, 4 to 6 moist

Chroma—1 to 6

Texture—clay loam, silty clay loam, or clay Reaction—slightly alkaline to strongly alkaline

Btk and Bk horizons:

Hue-7.5YR to 5Y

Value—6 or 7, 4 or 5 moist

Chroma—2 to 4

Texture—clay loam, silty clay loam, clay, or loam Calcium carbonate equivalent—4 to 14 percent Reaction—moderately alkaline to very strongly alkaline

#### Manzanst Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium

Landform: Drainageways, fans, and flood plains

Elevation: 4,400 to 6,000 feet

Slope: 0 to 5 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Manzanst clay loam, 1 to 5 percent slopes, southwest quarter of the southeast quarter of sec. 7, T. 13 S., R. 52 W.

- A—0 to 8 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; moderate medium granular structure; very hard, firm, slightly sticky and moderately plastic; many fine and medium roots; slightly alkaline; clear smooth boundary.
- Btk1—8 to 18 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; moderate medium angular blocky structure; very

hard, friable, moderately sticky and moderately plastic; few fine roots; few very fine pores; very few faint clay films on faces of peds; common medium masses of calcium carbonate; strongly effervescent; 2 percent fine gravel; slightly alkaline; clear smooth boundary.

- Btk2—18 to 30 inches; light yellowish brown (2.5Y 6/3) silty clay loam, grayish brown (2.5Y 5/2) moist; moderate medium angular blocky structure parting to moderate fine angular blocky; very hard, friable, moderately sticky and moderately plastic; few fine roots; few very fine pores; very few faint clay films on faces of peds; common medium masses of calcium carbonate; strongly effervescent; slightly alkaline; clear smooth boundary.
- Bk—30 to 40 inches; light yellowish brown (2.5Y 6/3) silty clay, grayish brown (2.5Y 5/2) moist; weak medium angular blocky structure; very hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; few very fine pores; common medium masses of calcium carbonate; strongly effervescent; slightly alkaline; clear smooth boundary.
- By—40 to 60 inches; light gray (2.5Y 7/2) silty clay loam, light olive brown (2.5Y 5/3) moist; massive; very hard, friable, moderately sticky and moderately plastic; very few very fine and fine roots; slightly effervescent; common fine and medium crystals of gypsum; moderately alkaline.

#### Range in Characteristics

Some pedons have BA and BC horizons.

## A horizon:

Hue—10YR or 2.5Y

Value—5 or 6, 3 to 5 moist

Chroma—2 or 3

Texture—loam, clay loam, silty clay loam, or clay Reaction—neutral to moderately alkaline

#### Btk and Bk horizons:

Hue—10YR or 2.5Y

Value—4 to 7, 4 or 5 moist

Chroma-2 to 4

Texture—silty clay loam, clay loam, clay, or silty clay

Reaction—slightly alkaline to strongly alkaline

#### By horizon:

Hue—10YR or 2.5Y

Value—5 to 7, 4 or 5 moist

Chroma—2 to 4

Texture—silty clay loam, clay loam, or clay

Reaction—moderately alkaline or strongly alkaline

## Midway Series

Depth class: Shallow

Drainage class: Well drained

Parent material: Residuum from shale

Landform: Hills

Elevation: 4,400 to 6,000 feet

Slope: 1 to 40 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Olney-Midway complex, 3 to 12 percent slopes, sec. 23, T. 15 S., R. 57 W.

- A—0 to 4 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; strongly effervescent; moderately alkaline; abrupt smooth boundary.
- AB—4 to 10 inches; light brownish gray (2.5Y 6/2) clay loam, light olive brown (2.5Y 5/4) moist; weak fine subangular blocky structure; hard, firm, very sticky and very plastic; strongly effervescent; moderately alkaline; clear smooth boundary.
- By—10 to 15 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, firm, moderately sticky and moderately plastic; strongly effervescent; many fine masses of gypsum; moderately alkaline; abrupt smooth boundary.

Cr—15 inches; shale.

## **Range in Characteristics**

#### A horizon:

Hue-2.5Y or 10YR

Value—4 to 6

Chroma-2 to 4

Texture—silty clay loam, clay loam, or clay Reaction—slightly alkaline or moderately alkaline

#### AB and By horizons:

Hue-2.5Y or 10YR

Value—4 to 7

Chroma-2 to 4

Texture—clay loam or clay

Reaction—slightly alkaline or moderately alkaline

#### **Nunn Series**

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium

Landform: Drainageways, fans, and terraces

Elevation: 4,400 to 6,000 feet

Slope: 0 to 5 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Nunn-Sampson, rarely flooded, complex, 0 to 3 percent slopes, about 320 feet south and 2,200 feet east of the northwest corner of sec. 7, T. 7 S., R. 53 W.

- Ap—0 to 5 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; hard, friable, moderately sticky and moderately plastic; neutral; abrupt smooth boundary.
- Bt1—5 to 12 inches; very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate medium angular blocky; very hard, firm, moderately sticky and moderately plastic; common faint clay films on faces of peds; neutral; clear smooth boundary.
- Bt2—12 to 19 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, moderately sticky and slightly plastic; few faint clay films on faces of peds; neutral; clear smooth boundary.
- Bk1—19 to 42 inches; pale brown (10YR 6/3) sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; many fine masses of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.
- Bk2—42 to 60 inches; brown (10YR 5/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and moderately plastic; few fine masses of calcium carbonate; violently effervescent; moderately alkaline.

## Range in Characteristics

• Some pedons have AB and BC horizons.

Ap and A horizons:

Hue—10YR

Value—4 or 5, 3 moist

Chroma—2 or 3

Texture—loam or clay loam

Reaction—neutral

Bt horizon:

Hue—10YR

Value—3 to 6

Chroma—2 or 3

Texture—clay loam, sandy clay loam, sandy clay,

or clay

Reaction—neutral or slightly alkaline

Bk horizon:

Hue—10YR

Value—5 to 7

Chroma-2 to 4

Texture—sandy loam, loam, clay loam, or sandy

clay loam

Reaction—slightly alkaline or moderately alkaline

#### **Olnest Series**

Depth class: Very deep Drainage class: Well drained Parent material: Eolian deposits Landform: Hills and plains Elevation: 4,400 to 6,000 feet Slope: 0 to 12 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Haxtun-Olnest loamy sands, 0 to 3 percent slopes, about 820 feet south and 336 feet east of the northwest corner of sec. 8, T. 14 S., R. 55 W.

- Ap—0 to 8 inches; brown (10YR 5/3) loamy sand, dark grayish brown (10YR 4/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine to medium roots; neutral; abrupt smooth boundary.
- Bt1—8 to 24 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; moderate coarse prismatic structure parting to moderate medium

and coarse subangular blocky; hard, friable, slightly sticky and slightly plastic; common very fine to medium roots; very few distinct clay films on faces of peds; neutral; clear smooth boundary.

- Bt2—24 to 30 inches; yellowish brown (10YR 5/4) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; common very fine to medium roots; very few prominent clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Bt3—30 to 38 inches; light yellowish brown (10YR 6/4) sandy clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; common very fine to medium roots; very few distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Bk1—38 to 53 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; slightly hard, firm, slightly sticky and moderately plastic; few very fine and fine roots; common fine masses of calcium carbonate; violently effervescent; moderately alkaline; gradual smooth boundary.
- Bk2—53 to 60 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; slightly hard, firm, slightly sticky and moderately plastic; few very fine and fine roots; common fine masses of calcium carbonate; violently effervescent; moderately alkaline.

## Range in Characteristics

#### Ap horizon:

Hue—10YR

Value—4 or 5, 3 or 4 moist

Chroma—3 or 4, 2 to 4 moist

Texture—loamy sand or sandy loam

Reaction—neutral or slightly alkaline

#### Bt horizon:

Hue—10YR

Value—4 to 6. 4 or 5 moist

Chroma—3 or 4

Texture—sandy loam or sandy clay loam Reaction—neutral to moderately alkaline

## Bk horizon:

Hue—10YR

Value—6 or 7, 5 or 6 moist

Chroma—3 or 4

Texture—loamy sand, sandy loam, sandy clay

loam, or loam

Reaction—moderately alkaline or strongly alkaline

## **Olney Series**

Depth class: Very deep Drainage class: Well drained Parent material: Eolian deposits

Landform: Plains

Elevation: 4,400 to 6,000 feet

Slope: 0 to 12 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Olney sandy loam (fig. 10), 1 to 3 percent slopes, about 120 feet south and 1,380 feet east of the northwest corner of sec. 13, T. 14 S., R. 59 W.

- A—0 to 4 inches; brown (10YR 5/3) sandy loam, brown (7.5YR 4/4) moist; weak fine granular structure; slightly hard, firm, nonsticky; 1 percent fine gravel; neutral; clear smooth boundary.
- Bt1—4 to 12 inches; brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 3/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, slightly sticky; common distinct clay films on faces of peds; 3 percent fine gravel; neutral; clear smooth boundary.
- Bt2—12 to 18 inches; yellowish brown (10YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, firm, slightly sticky; common distinct clay films on faces of peds; 3 percent fine gravel; neutral; clear smooth boundary.
- Bt3—18 to 24 inches; pale brown (10YR 6/3) sandy loam, brown (7.5YR 5/4) moist; weak medium prismatic structure parting to weak medium subangular blocky; soft, friable, nonsticky; few faint clay films on faces of peds; 5 percent fine gravel; slightly alkaline; clear smooth boundary.
- Bk1—24 to 31 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky; few medium masses of calcium carbonate; slightly effervescent; 10 percent fine gravel; slightly alkaline; clear smooth boundary.



Figure 10.—Profile of Olney sandy loam.

Bk2—31 to 60 inches; light gray (10YR 7/2) loamy sand, light brownish gray (10YR 6/2) moist; single grain; soft, very friable, slightly sticky; few medium masses of calcium carbonate; strongly effervescent; 10 percent fine gravel; moderately alkaline.

## Range in Characteristics

#### A horizon:

Hue—10YR or 7.5YR

Value—4 or 5, 3 or 4 moist

Chroma—3 or 4, 2 to 4 moist

Texture—loamy sand or sandy loam

Reaction—neutral or slightly alkaline

#### Bt horizon:

Hue—10YR or 7.5YR

Value—4 to 6, 3 to 5 moist

Chroma—3 or 4

Texture—sandy loam or sandy clay loam

Reaction—neutral to moderately alkaline

#### Bk horizon:

Hue—10YR or 7.5YR

Value—6 or 7, 5 or 6 moist

Chroma-2 to 4

Texture—sandy loam, sandy clay loam, or loamy

sand

Reaction—slightly alkaline to strongly alkaline

## **Otero Series**

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Eolian deposits

Landform: Hills

Elevation: 4,400 to 6,000 feet

Slope: 1 to 5 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Otero sandy loam, 1 to 5 percent slopes, about 2,620 feet north and 440 feet east of the southwest corner of sec. 11, T. 13 S., R. 56 W.

Ap1—0 to 3 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

Ap2—3 to 6 inches; brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

AB-6 to 13 inches; brown (10YR 5/3) sandy loam,

dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, very friable, slightly sticky and nonplastic; few very fine roots; slightly effervescent; slightly alkaline; clear smooth boundary.

- Bk1—13 to 28 inches; very pale brown (10YR 7/3) sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few medium masses of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.
- Bk2—28 to 60 inches; very pale brown (10YR 7/3) sandy loam, pale brown (10YR 6/3) moist; massive; hard, friable, moderately sticky and slightly plastic; many medium masses of calcium carbonate; violently effervescent; moderately alkaline.

## Range in Characteristics

Ap horizon:

Hue—10YR

Value—5 or 6, 3 to 5 moist

Chroma—2 or 3

Texture—sandy loam

Reaction—neutral to moderately alkaline

AB horizon:

Hue—10YR

Value—5 or 6, 4 or 5 moist

Chroma—3 or 4, 2 to 4 moist

Texture—sandy loam

Reaction—slightly alkaline or moderately

alkaline

Bk horizon:

Hue—10YR

Value—6 or 7, 5 or 6 moist

Chroma—3 or 4. 3 to 6 moist

Texture—sandy loam

Reaction—slightly alkaline or moderately

alkaline

## **Oterodry Series**

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Eolian deposits

Landform: Hills

Elevation: 4,400 to 6,000 Slope: 1 to 9 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Kim-Oterodry fine sandy loams, 2 to 7 percent slopes, about 1,300 feet south and 2,500 feet east of the northwest corner of sec. 2, T. 28 S., R. 64 W.

- A—0 to 11 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; strongly effervescent; moderately alkaline; clear smooth boundary.
- AB—11 to 25 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; strongly effervescent; moderately alkaline; clear smooth boundary.
- Bk—25 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few masses of calcium carbonate; strongly effervescent; moderately alkaline.

## **Range in Characteristics**

Texture: Fine sandy loam or sandy loam

Clay content: 5 to 18 percent

Reaction: Slightly alkaline or moderately alkaline

## **Platner Series**

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Plains

Elevation: 4,400 to 6,000 feet

Slope: 0 to 5 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

### **Typical Pedon**

Platner loam, 0 to 3 percent slopes, about 200 feet east and 780 feet south of the northwest corner of sec. 30, T. 12 S., R. 56 W.

- A—0 to 7 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; hard, very friable, slightly sticky and slightly plastic; many fine to coarse roots; neutral; abrupt smooth boundary.
- Bt1—7 to 9 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; very hard, firm, moderately sticky

- and moderately plastic; many fine to coarse roots; few faint clay films on faces of peds; neutral; abrupt smooth boundary.
- Bt2—9 to 15 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to strong fine angular blocky; very hard, firm, very sticky and moderately plastic; many fine to coarse roots; few faint clay films on faces of peds; neutral; abrupt wavy boundary.
- Btk—15 to 22 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate fine angular blocky; hard, firm, moderately sticky and moderately plastic; many fine to coarse roots; few faint clay films on faces of peds; few fine masses of calcium carbonate; moderately alkaline; clear wavy boundary.
- Bk1—22 to 40 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common medium masses of calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.
- Bk2—40 to 50 inches; very pale brown (10YR 7/3) clay loam, brown (10YR 5/3) moist; massive; slightly hard, friable, moderately sticky and moderately plastic; few fine masses of calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.
- Bk3—50 to 60 inches; reddish yellow (7.5YR 7/6) clay loam, strong brown (7.5YR 5/6) moist; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; many coarse masses of calcium carbonate; violently effervescent; strongly alkaline.

## Range in Characteristics

#### A horizon:

Hue—10YR

Value—4 or 5, 2 or 3 moist

Chroma—2 or 3

Texture—sandy loam or loam

Reaction—neutral

## Bt and Btk horizons:

Hue-10YR or 2.5Y

Value—4 or 5. 3 or 4 moist

Chroma—2 to 4

Texture—sandy clay, clay loam, or clay Reaction—neutral to moderately alkaline

#### Bk horizon:

Hue-10YR or 2.5Y

Value-5 or 6, 4 or 5 moist

Chroma-2 or 3

Texture—silty clay loam or clay loam

Reaction—moderately alkaline

#### Lower Bk horizon:

Hue—7.5YR to 2.5Y

Value—5 to 7, 4 or 5 moist

Chroma—3 to 6, 2 to 6 moist

Texture—loamy sand, sandy loam, loam, sandy

clay loam, or clay loam

Reaction—moderately alkaline or strongly alkaline

### Pleasant Series

Depth class: Very deep

Drainage class: Moderately well drained

Parent material: Alluvium Landform: Depressions Elevation: 4,400 to 6,000 feet

Slope: 0 to 2 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Pleasant loam, 0 to 1 percent slopes, rarely ponded, northeast quarter of the northeast quarter of sec. 27, T. 7 S., R. 52 W.

- A—0 to 2 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; neutral; abrupt smooth boundary.
- Bt1—2 to 21 inches; dark gray (10YR 4/1) clay, very dark gray (10YR 3/1) moist; moderate medium prismatic structure parting to moderate medium angular blocky; extremely hard, firm, moderately sticky and moderately plastic; many distinct clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Bt2—21 to 40 inches; dark gray (10YR 4/1) clay, dark gray (10YR 4/1) moist; moderate medium angular blocky structure; extremely hard, firm, moderately sticky and moderately plastic; many distinct clay films on faces of peds; moderately alkaline; clear smooth boundary.
- C—40 to 60 inches; grayish brown (10YR 5/2) silty clay loam, dark gray (10YR 4/1) moist; weak medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; moderately alkaline.

## Range in Characteristics

#### A horizon:

Hue—10YR

Value—4 or 5, 2 or 3 moist

Chroma—2 or 3

Texture—loam

Reaction—neutral

#### Bt horizon:

Hue—10YR

Value—4 or 5, 3 or 4 moist

Chroma—1 to 3

Texture—clay

Reaction—slightly alkaline or moderately alkaline

#### C horizon:

Hue—10YR

Value—5 or 6, 4 or 5 moist

Chroma—1 to 3

Texture—silty clay loam

Reaction—moderately alkaline

## Rago Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 2 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Rago silt loam, 0 to 2 percent slopes, rarely flooded, southwest quarter of sec. 17, T. 11 S., R. 55 W.

- Ap—0 to 5 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; neutral; clear smooth boundary.
- BA—5 to 10 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure parting to moderate coarse subangular blocky; slightly hard, very friable, moderately sticky and moderately plastic; neutral; clear smooth boundary.
- Bt—10 to 19 inches; grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm,

- moderately sticky and moderately plastic; common distinct clay films on faces of peds; neutral; abrupt smooth boundary.
- Btb—19 to 27 inches; dark gray (10YR 4/1) silty clay, very dark gray (10YR 3/1) moist; moderate medium prismatic structure parting to strong medium and coarse angular blocky; very hard, very firm, very sticky and very plastic; common faint clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Btkb1—27 to 31 inches; grayish brown (2.5Y 5/2) silty clay, dark grayish brown (2.5Y 4/2) moist; moderate medium prismatic structure parting to strong medium angular blocky; very hard, very firm, very sticky and very plastic; many distinct clay films on faces of peds; few fine masses of calcium carbonate; slightly alkaline; clear smooth boundary.
- Btkb2—31 to 47 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; weak coarse prismatic structure parting to moderate medium angular blocky; hard, firm, moderately sticky and moderately plastic; common distinct clay films on faces of peds; common medium masses of calcium carbonate; slightly effervescent; slightly alkaline; gradual wavy boundary.
- Bk1—47 to 55 inches; light gray (2.5Y 7/2) silt loam, light brownish gray (2.5Y 6/2) moist; massive; slightly hard, friable, moderately sticky and moderately plastic; many fine and medium masses of calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.
- Bk2—55 to 60 inches; light gray (2.5Y 7/2) silt loam, light brownish gray (2.5Y 6/2) moist; massive; slightly hard, friable, moderately sticky and moderately plastic; few fine masses of calcium carbonate; strongly effervescent; moderately alkaline.

## **Range in Characteristics**

#### Ap horizon:

Hue—10YR

Value—4 or 5, 3 moist

Chroma—2 or 3

Texture—silt loam or silty clay loam

Reaction—neutral

#### Bt and Btb horizons:

Hue-10YR or 2.5Y

Value—4 to 6, 3 to 5 moist

Chroma—1 to 3

Texture—silty clay or silty clay loam Reaction—neutral or slightly alkaline

#### Btkb horizon:

Hue—10YR or 2.5Y

Value—4 to 6, 2 to 5 moist

Chroma—1 to 3

Texture—silty clay or silty clay loam

Reaction—slightly alkaline or moderately alkaline

#### Bk horizon:

Hue—10YR or 2.5Y

Value—4 to 7, 4 to 6 moist

Chroma-2 or 3

Texture—silt loam or silty clay loam

Reaction—moderately alkaline

### Razor Series

Depth class: Moderately deep Drainage class: Well drained

Parent material: Alluvium and residuum from shale

Landform: Hills

*Elevation:* 4,400 to 6,000 feet

Slope: 1 to 15 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Razor clay loam, moist, 1 to 5 percent slopes, about 45 feet south and 2,005 feet east of the northwest corner of sec. 16, T. 10 S., R. 54 W.

A—0 to 2 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate fine granular structure; soft, friable, moderately sticky and very plastic; slightly effervescent; moderately alkaline; clear smooth boundary.

BA—2 to 5 inches; grayish brown (2.5Y 5/2) silty clay, dark grayish brown (2.5Y 4/2) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and very plastic; strongly effervescent; moderately alkaline; clear smooth boundary.

Bw—5 to 15 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; extremely hard, firm, moderately sticky and very plastic; strongly effervescent; moderately alkaline; clear smooth boundary.

By—15 to 21 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; weak coarse prismatic structure; extremely hard, firm,

moderately sticky and very plastic; violently effervescent; few fine masses of gypsum; strongly alkaline; gradual wavy boundary.

Bky—21 to 27 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; massive; very hard, friable, moderately sticky and very plastic; few fine masses of calcium carbonate; stongly effervescent; few fine and medium masses of gypsum; 10 percent channers; moderately alkaline; clear wavy boundary.

Cr—27 to 60 inches; light brownish gray (2.5Y 6/2) shale; strongly effervescent.

## Range in Characteristics

## A horizon:

Hue-10YR or 2.5Y

Value-5 or 6, 4 or 5 moist

Chroma—2 or 3

Texture—clay loam or silty clay loam Reaction—slightly or moderately alkaline

### Bw and Bv horizons:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam, clay loam, or silty clay Reaction—moderately alkaline or strongly alkaline

### Bky horizon:

Hue-2.5Y

Value—5 or 6

Chroma—2 or 3

Texture—clay, clay loam, or silty clay

Reaction—slightly alkaline to strongly alkaline

## Sampson Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

#### **Typical Pedon**

Sampson loam, 0 to 2 percent slopes, rarely flooded, southwest quarter of sec. 1, T. 8 S., R. 56 W.

A—0 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist;

moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; neutral; clear smooth boundary.

- BA—7 to 12 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; neutral; clear smooth boundary.
- Bt1—12 to 24 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to strong medium subangular blocky; very hard, friable, moderately sticky and moderately plastic; common very fine roots; few very fine pores; few faint very dark grayish brown (10YR 3/2) clay films on faces of peds; 1 percent gravel; neutral; clear smooth boundary.
- Bt2—24 to 30 inches; dark grayish brown loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure parting to moderate medium subangular blocky; very hard, friable, moderately sticky and moderately plastic; few very fine roots and pores; very few faint very dark grayish brown (10YR 3/2) clay films on faces of peds; 1 percent gravel; neutral; clear smooth boundary.
- Btk—30 to 36 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, friable, moderately sticky and moderately plastic; few very fine roots and pores; very few faint very dark grayish brown (10YR 3/2) clay films on faces of peds; common fine masses of calcium carbonate; strongly effervescent; 2 percent gravel; slightly alkaline; clear smooth boundary.
- Bk1—36 to 50 inches; light brownish gray (10YR 6/2) loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots and pores; few distinct very dark grayish brown (10YR 3/2) organic coats; common fine and medium masses of calcium carbonate; violently effervescent; 2 percent gravel; moderately alkaline; clear smooth boundary.
- Bk2—50 to 60 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine and medium masses of calcium carbonate; violently effervescent; 2 percent gravel; moderately alkaline.

## Range in Characteristics

Depth to secondary calcium carbonate: 23 to 60 inches

#### A horizon:

Hue—10YR

Value-4 or 5, 2 or 3 moist

Chroma—2

Texture—loam or clay loam

Reaction—neutral or slightly alkaline

#### Bt and Btk horizons:

Hue—10YR

Value-3 to 6, 3 or 4 moist

Chroma—1 to 3

Texture—loam or clay loam

Reaction—neutral or slightly alkaline

#### Bk horizon:

Hue-10YR

Value-5 to 7, 4 to 6 moist

Chroma—2 or 3

Texture—loamy sand, loam, sandy clay loam, gravelly sandy clay loam, or clay loam Reaction—neutral to moderately alkaline

#### Satanta Series

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Terraces

Elevation: 4,400 to 6,000 feet

Slope: 1 to 3 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

## **Typical Pedon**

Satanta loam, 1 to 3 percent slopes, about 1,890 feet west and 216 feet north of the southeast corner of sec. 15, T. 7 S., R. 54 W.

- A—0 to 4 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine roots; few medium pores; 2 percent gravel; neutral; clear smooth boundary.
- Bt1—4 to 12 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky;

hard, friable, moderately sticky and slightly plastic; common fine roots; few medium pores; very few faint very dark grayish brown (10YR 3/2 moist) clay films on faces of peds and in pores; neutral; clear smooth boundary.

- Bt2—12 to 19 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; common medium pores; very few faint very dark grayish brown (10YR 3/2 moist) clay films in root channels and pores; 5 percent gravel; neutral; clear smooth boundary.
- Bk1—19 to 28 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak coarse subangular blocky structure; slightly hard, very friable, moderately sticky and nonplastic; few fine roots; few medium pores; few fine masses of calcium carbonate; strongly effervescent; 5 percent gravel; moderately alkaline; clear smooth boundary.
- Bk2—28 to 60 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, moderately sticky and nonplastic; few fine roots; few medium pores; few fine masses of calcium carbonate; strongly effervescent; 2 percent gravel; moderately alkaline.

# **Range in Characteristics**

Rock fragments: Less than 5 percent throughout Depth to secondary calcium carbonate: 14 to 33 inches

# A horizon:

Hue—10YR

Value—3 to 5, 3 or 4 moist

Chroma—2 or 3

Texture—loam or sandy clay loam

Reaction—neutral or slightly alkaline

### Bt or Btk horizon:

Hue-10YR

Value—4 to 6, 3 to 5 moist

Chroma—2 to 4

Texture—sandy loam, loam, sandy clay loam, or clay loam

Reaction—neutral to moderately alkaline

### Bk horizon:

Hue-7.5YR or 10YR

Value—5 to 7, 4 to 6 moist

Texture—sandy loam, loam, sandy clay loam, silt loam, or clay loam

Reaction—neutral to strongly alkaline

# **Seldom Series**

Depth class: Very deep

Drainage class: Somewhat poorly drained Parent material: Alluvium and/or eolian deposits

Landform: Flood plains or hills Elevation: 4,400 to 6,000 feet

Slope: 0 to 25 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Seldom sandy loam, 0 to 3 percent slopes, rarely flooded, about 1,450 feet east and 1,700 feet north of the southwest corner of sec. 21, T. 15 S., R. 58 W.

- A1—0 to 7 inches; dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many fine and medium roots; neutral; clear smooth boundary.
- A2—7 to 15 inches; dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; hard, friable, nonsticky and nonplastic; few fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.
- Bkg1—15 to 34 inches; light brownish gray (10YR 6/2) sandy loam, grayish brown (10YR 5/2) moist; weak fine subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few fine roots; few fine masses of calcium carbonate; violently effervescent; few fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations; very strongly alkaline; clear smooth boundary.
- Bkg2—34 to 42 inches; white (10YR 8/1) sandy loam, light brownish gray (10YR 6/2) moist; massive; very hard, friable, slightly sticky and slightly plastic; few fine roots; few fine masses of calcium carbonate; violently effervescent; few fine faint gray (10YR 6/1) redoximorphic depletions and few fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations; very strongly alkaline; gradual smooth boundary.
- Bkg3—42 to 60 inches; white (10YR 8/1) stratified sandy loam and sandy clay loam, light brownish gray (10YR 6/2) moist; massive; hard, friable, slightly sticky and nonplastic; few fine roots; few fine masses of calcium carbonate; violently

effervescent; few fine prominent yellowish brown (10YR 5/6) redoximorphic concentrations; moderately alkaline.

# Range in Characteristics

### A horizon:

Hue—10YR

Value—4 or 5, 2 or 3 moist

Chroma—1 to 3
Texture—sandy loam

Reaction—neutral to moderately alkaline

# Upper Bkg horizon:

Hue-10YR or 2.5Y

Value—6 to 8, 4 to 6 moist

Chroma—1 or 2

Texture—sandy loam

Calcium carbonate equivalent—0 to 15

percent

Reaction—moderately alkaline to very strongly alkaline

# Lower Bkg horizon:

Hue-10YR, 2.5Y, or 5Y

Value—6 to 8, 5 or 6 moist

Chroma—1 or 2

Texture—loamy sand, sandy loam, loam, silty clay loam, sandy clay loam, or sandy clay (textures are often stratified)

Calcium carbonate equivalent—5 to 20 percent Reaction—moderately alkaline to very strongly alkaline

# Shingle Series

Depth class: Shallow

Drainage class: Well drained

Parent material: Residuum from shale

Landform: Hills

Elevation: 4,400 to 6,000 feet

Slope: 1 to 9 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Shingle-Midway complex, moist, 1 to 9 percent slopes, about 1,800 feet north and 159 feet west of the southeast corner of sec. 3, T. 9 S., R. 56 W.

Ap—0 to 4 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; weak fine granular structure; slightly hard, very friable, moderately sticky and moderately plastic; strongly

effervescent; 5 percent fine gravel; slightly alkaline; abrupt smooth boundary.

Bk—4 to 15 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, moderately sticky and moderately plastic; many fine masses of calcium carbonate; strongly effervescent; 10 percent channers; slightly alkaline; clear smooth boundary.

Cr—15 to 60 inches; light brownish gray (2.5Y 6/2) shale; slightly effervescent.

# **Range in Characteristics**

# Ap horizon:

Hue-10YR or 2.5Y

Value-5 or 6, 4 or 5 moist

Chroma—2 to 4

Texture—silt loam, loam, or silty clay loam

Reaction—slightly alkaline or moderately alkaline

# Bk horizon:

Hue-10YR or 2.5Y

Value—5 or 6, 4 or 5 moist

Chroma-2 to 4

Texture—loam, silty clay loam, or clay loam

Reaction—slightly alkaline or moderately alkaline

# Sundance Series

Depth class: Very deep Drainage class: Well drained

Parent material: Eolian material over loess

Landform: Plains

Elevation: 4,400 to 6,000 feet

Slope: 1 to 3 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Sundance loamy sand, 1 to 3 percent slopes, about 700 feet west and 2,580 feet south of the northeast corner of sec. 3, T. 19 S., R. 47 W.

Ap—0 to 8 inches; yellowish brown (10YR 5/4) loamy sand, dark brown (10YR 4/3) moist; single grained; loose; neutral; abrupt smooth boundary.

Bt—8 to 17 inches; dark yellowish brown (10YR 4/4) sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; few faint clay films on faces of peds; neutral; abrupt smooth boundary.

- 2Bt—17 to 28 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, moderately sticky and moderately plastic; common fine roots; common faint clay films on faces of peds; neutral; gradual wavy boundary.
- 2Bk—28 to 45 inches; very pale brown (10YR 7/3) silt loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; soft, very friable, moderately sticky and moderately plastic; few fine roots; few fine masses of calcium carbonate; moderately alkaline; clear wavy boundary.
- 2C—45 to 84 inches; very pale brown (10YR 7/4) silt loam, light yellowish brown (10YR 6/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; moderately alkaline.

# **Range in Characteristics**

# Ap horizon:

Hue-10YR

Value—4 or 5, 3 or 4 moist

Chroma—3 or 4

Texture—loamy sand

# Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6, 3 to 5 moist

Chroma—3 or 4

Texture—sandy loam or sandy clay loam

### 2Bt and 2Bk horizons:

Hue—10YR or 2.5Y

Value—5 or 6, 4 or 5 moist

Chroma-3 or 4

Texture—clay loam or silty clay loam

#### 2C horizon:

Hue-10YR or 2.5Y

### Table Mountain Series

Depth class: Very deep Drainage class: Well drained Parent material: Alluvium Landform: Flood plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 2 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Table Mountain loam, 0 to 2 percent slopes, rarely flooded, in the northwest quarter of the southeast quarter of sec. 25, T. 7 S., R. 53 W.

- Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; neutral; abrupt wavy boundary.
- Bw1—6 to 21 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and many very fine roots; neutral; clear smooth boundary.
- Bw2—21 to 29 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; slightly alkaline; clear smooth boundary.
- Bw3—29 to 33 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; slightly alkaline; clear smooth boundary.
- BC—33 to 38 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; slightly alkaline; clear smooth boundary.
- C—38 to 60 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; slightly effervescent; slightly alkaline.

# Range in Characteristics

### Ap horizon:

Hue—10YR

Value—4, 3 moist

Chroma—2 or 3

Texture—loam

Reaction—neutral or slightly alkaline

# Bw horizon:

Hue—10YR

Value—3 to 5, 3 or 4 moist

Chroma-2 or 3

Texture—loam or clay loam

Reaction—neutral or slightly alkaline

BC horizon:

Hue—10YR

Value—3 to 5, 3 or 4 moist

Chroma—2 or 3

Texture—loam

Reaction—slightly alkaline or moderately alkaline

C horizon:

Hue-10YR

Value—5 or 6, 3 or 4 moist

Chroma—2 or 3 Texture—loam

Reaction—slightly alkaline or moderately alkaline

# Travessilla Series

Depth class: Shallow

Drainage class: Well drained

Parent material: Residuum from sandstone

Landform: Escarpments Elevation: 4,400 to 6,000 feet

Slope: 6 to 60 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Travessilla-Rock outcrop complex, 6 to 60 percent slopes, about 555 feet south and 950 feet west of the northeast corner of sec. 25, T. 15 S., R. 55 W.

A—0 to 3 inches; grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, very friable; slightly effervescent; 10 percent fine gravel; slightly alkaline; clear wavy boundary.

Bw—3 to 13 inches; grayish brown (10YR 5/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, very friable, moderately sticky and slightly plastic; slightly effervescent; 15 percent fine gravel; slightly alkaline; abrupt wavy boundary.

R—13 to 60 inches; grayish brown (10YR 5/2) calcareous sandstone.

### Range in Characteristics

A horizon:

Hue—10YR

Value—4 or 5. 3 or 4 moist

Chroma—2 or 3

Texture—sandy loam

Reaction—slightly alkaline or moderately alkaline

Bw horizon:

Hue—10YR

Value-4 or 5, 3 or 4 moist

Chroma—2 or 3

Texture—gravelly sandy loam

Reaction—slightly alkaline or moderately alkaline

# **Truckton Series**

Depth class: Very deep Drainage class: Well drained Parent material: Eolian deposits

Landform: Hills

Elevation: 4,400 to 6,000 feet

Slope: 1 to 9 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Truckton sandy loam, 5 to 9 percent slopes, about 2,300 feet west and 550 feet north of the southeast corner of sec. 6, T. 11 S., R. 56 W.

A—0 to 6 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; neutral; clear smooth boundary.

Bt1—6 to 10 inches; brown (10YR 4/3) sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few faint clay films on faces of peds; neutral; clear smooth boundary.

Bt2—10 to 16 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; hard, very friable, nonsticky and nonplastic; few faint clay films on faces of peds; neutral; clear smooth boundary.

C—16 to 60 inches; light yellowish brown (10YR 6/4) loamy coarse sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; neutral.

### Range in Characteristics

A horizon:

Hue—10YR

Value—4 or 5, 3 moist

Chroma—2

Texture—sandy loam Reaction—neutral

#### Bt horizon:

Hue—7.5YR or 10YR Value—4 or 5, 3 or 4 moist Chroma—2 to 4 Texture—sandy loam Reaction—neutral

#### C horizon:

Hue—10YR Value—6, 4 or 5 moist Chroma—4

Texture—sandy loam, loamy sand, or loamy coarse sand
Reaction—neutral

# Valent Series

Depth class: Very deep

Drainage class: Excessively drained Parent material: Eolian deposits

Landform: Dunes

Elevation: 4,400 to 6,000 feet Slope: 0 to 25 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

### **Typical Pedon**

Valent-Bijou complex, 1 to 12 percent slopes, about 1,875 feet north and 675 feet west of the southeast corner of sec. 8, T. 12 S., R. 54 W.

- A—0 to 3 inches; brown (10YR 5/3) sand, dark brown (10YR 3/3) moist; weak fine granular structure; loose, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine pores; neutral; clear smooth boundary.
- C1—3 to 43 inches; light yellowish brown (10YR 6/4) sand, yellowish brown (10YR 5/4) moist; single grain; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine pores; neutral; clear smooth boundary.
- C2—43 to 60 inches; very pale brown (10YR 7/4) sand, light yellowish brown (10YR 6/4) moist; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine pores; neutral.

# Range in Characteristics

### A horizon:

Hue—10YR

Value-4 to 6, 3 or 4 moist

Chroma—2 or 3

Texture—sand or loamy sand

Reaction—neutral or slightly alkaline

### C horizon:

Hue—10YR

Value—4 to 7, 4 to 6 moist Chroma—3 to 6, 3 or 4 moist Texture—sand or loamy sand Reaction—neutral or slightly alkaline

### Vona Series

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Eolian deposits

Landform: Hills

Elevation: 4,400 to 6,000 feet

Slope: 1 to 25 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Vona loamy sand, 1 to 9 percent slopes, about 1,160 feet south and 90 feet east of the northwest corner of sec. 8, T. 14 S., R. 55 W.

- Ap—0 to 7 inches; brown (10YR 5/3) loamy sand, dark grayish brown (10YR 4/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; neutral; abrupt smooth boundary.
- Bt—7 to 16 inches; brown (7.5YR 5/4) sandy loam, brown (7.5YR 4/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; slightly alkaline; clear smooth boundary.
- Bk1—16 to 25 inches; pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; soft, very friable, nonsticky and slightly plastic; common medium masses of calcium carbonate; violently effervescent; moderately alkaline; gradual smooth boundary.

Bk2—25 to 60 inches; very pale brown (10YR 7/3) loamy sand, light yellowish brown (10YR 6/4) moist; single grain; soft, very friable, nonsticky and nonplastic; few fine masses of calcium carbonate; strongly effervescent; moderately alkaline.

# Range in Characteristics

• Some pedons have a Btk horizon.

#### A horizon:

Hue—10YR

Value—4 or 5, 3 or 4 moist Chroma—3 or 4, 2 or 3 moist Texture—loamy sand or sandy loam Reaction—neutral

#### Bt horizon:

Hue—7.5YR or 10YR Value—4 or 5, 4 moist Chroma—3 or 4, 2 to 4 moist Texture—sandy loam Reaction—slightly alkaline

#### Bk horizon:

Hue—10YR

Value—6 or 7, 5 moist

Chroma—3 or 4

Texture—sandy loam or loam Reaction—moderately alkaline

### Lower Bk horizon:

Hue—10YR

Value—5 to 7. 4 to 6 moist

Chroma—3 or 4

Texture—loamy sand, sandy loam, or loam

Reaction—moderately alkaline or strongly alkaline

# **Vonid Series**

Depth class: Very deep

Drainage class: Somewhat excessively drained

Parent material: Eolian deposits Landform: Hills and interdunes Elevation: 4,400 to 6,000 feet Slope: 1 to 25 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches
Mean annual air temperature: 47 to 51 degrees F
Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Vonid loamy sand, 1 to 9 percent slopes, about 1,350 feet east and 50 feet north of the southwest corner of sec. 16, T. 17 S., R. 59 W.

- A—0 to 6 inches; brown (10YR 5/3) loamy sand, dark brown (10YR 3/3) moist; weak coarse granular structure; slightly hard, very friable, nonsticky and nonplastic; many fine through coarse roots; neutral; gradual smooth boundary.
- Bt1—6 to 14 inches; dark yellowish brown (10YR 4/4) sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; many fine through coarse roots; few faint clay films; neutral; clear smooth boundary.
- Bt2—14 to 23 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; very few fine roots; few faint clay films; neutral; clear smooth boundary.
- Bt3—23 to 34 inches; light yellowish brown (10YR 6/4) sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; very few fine roots; few faint clay films; neutral; clear smooth boundary.
- Bk1—34 to 52 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; very few fine roots; many medium masses of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.
- Bk2—52 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and nonplastic; few fine masses of calcium carbonate; strongly effervescent; moderately alkaline.

# **Range in Characteristics**

#### A horizon:

Hue—7.5YR or 10YR Value—4 or 5, 3 or 4 moist

Chroma—2 to 4

Texture—sandy loam or loamy sand Reaction—neutral or slightly alkaline

### Bt horizon:

Hue—7.5YR or 10YR Value—4 to 6, 3 to 5 moist

Chroma—3 or 4
Texture—sandy loam

Calcium carbonate equivalent—0 to 5 percent Reaction—neutral or slightly alkaline

# Bk horizon:

Hue—7.5YR or 10YR Value—5 or 6, 4 or 5 moist Chroma—3 to 6

Texture—sandy loam

Calcium carbonate equivalent—5 to 15

percent

Reaction—slightly alkaline or moderately

alkaline

### Lower Bk horizon:

Hue—7.5YR or 10YR Value—6 or 7, 5 moist

Chroma—3 to 6

Texture—sandy loam or loamy sand

Calcium carbonate equivalent—5 to 15

percent

Reaction—slightly alkaline to strongly alkaline

# Wages Series

Depth class: Very deep Drainage class: Well drained

Parent material: Alluvium and/or eolian deposits

Landform: Hills

*Elevation:* 4,400 to 6,000 feet

Slope: 1 to 15 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Wages-Karvel complex, 6 to 15 percent slopes, about 1,755 feet south and 1,320 feet east of the northwest corner of sec. 5, T. 8 S., R. 56 W.

- A—0 to 4 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky; many fine and very fine roots; 2 percent fine gravel; neutral; clear smooth boundary.
- Bt—4 to 10 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, firm, moderately sticky; many fine and very fine roots; few faint clay films on faces of peds; 1 percent fine gravel; neutral; clear smooth boundary.
- Btk—10 to 13 inches; light brownish gray (10YR 6/2) clay loam, brown (10YR 5/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, firm, moderately sticky; many fine and very fine roots;

few faint clay films on faces of peds; few fine masses of calcium carbonate; strongly effervescent; 1 percent fine gravel; moderately alkaline; clear smooth boundary.

- Bk—13 to 35 inches; light gray (10YR 7/2) loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to weak fine and medium subangular blocky; slightly hard, firm, moderately sticky; common very fine roots; few fine masses of calcium carbonate; violently effervescent; 1 percent fine gravel; moderately alkaline; clear smooth boundary.
- C—35 to 60 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; weak coarse prismatic structure parting to weak medium subangular blocky; soft, friable, slightly sticky; few very fine roots; strongly effervescent; 1 percent fine gravel; slightly alkaline.

# Range in Characteristics

### A horizon:

Hue—10YR

Value—4 or 5, 3 moist

Chroma-2 or 3

Texture—loam

Reaction—neutral or slightly alkaline

# Bt horizon:

Hue—10YR

Value—4 or 5, 3 or 4 moist

Chroma—2 to 4, 2 or 3 moist

Texture—loam, clay loam, or sandy clay

loam

Reaction—neutral or slightly alkaline

# Btk horizon:

Hue—10YR

Value-5 to 7. 4 to 6 moist

Chroma—2 or 3

Texture—clay loam

Reaction—moderately alkaline

### Bk horizon:

Hue—10YR

Value—5 to 7, 4 or 5 moist

Chroma—2 to 4, 2 or 3 moist

Texture—loam

Reaction—moderately alkaline

### C horizon:

Hue—7.5YR or 10YR

Value—6 or 7, 5 or 6 moist

Chroma—2 or 3, 3 or 4 moist

Texture—loam, clay loam, or sandy clay loam

Reaction—slightly alkaline or

moderately alkaline

# Weld Series

Depth class: Very deep Drainage class: Well drained Parent material: Loess Landform: Hills and plains Elevation: 4,400 to 6,000 feet

Slope: 0 to 5 percent MLRA: 67 and 69

Mean annual precipitation: 11 to 16 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Weld silt loam, 0 to 2 percent slopes, about 270 feet north and 2,065 feet east of the southwest corner of sec. 3, T. 9 S., R. 54 W.

- A—0 to 4 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, moderately sticky and moderately plastic; many fine and very fine roots; neutral; abrupt smooth boundary.
- Bt1—4 to 10 inches; grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate fine subangular blocky; hard, firm, moderately sticky and moderately plastic; many fine and very fine roots; common faint clay films on faces of peds; neutral; clear smooth boundary.
- Bt2—10 to 19 inches; grayish brown (10YR 5/2) silty clay, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, very firm, moderately sticky and moderately plastic; common fine roots; common faint clay films on faces of peds; neutral; clear wavy boundary.
- Btk—19 to 33 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; very hard, firm, moderately sticky and moderately plastic; common fine roots; common faint clay films on faces of peds; common fine and medium masses of calcium carbonate; strongly effervescent; slightly alkaline; clear wavy boundary.
- Bk1—33 to 44 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; weak coarse prismatic structure parting to moderate medium and coarse subangular blocky; slightly

hard, friable, moderately sticky and moderately plastic; common fine masses of calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.

Bk2—44 to 60 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, moderately sticky and slightly plastic; common fine masses of calcium carbonate; violently effervescent; moderately alkaline.

# **Range in Characteristics**

### A horizon:

Hue—10YR

Value-4 or 5, 2 or 3 moist

Chroma—2 or 3
Texture—silt loam

Reaction—neutral or slightly alkaline

### Bt horizon:

Hue—10YR

Value—4 to 6, 3 or 4 moist

Chroma—2 or 3

Texture—silty clay loam or silty clay Reaction—neutral or slightly alkaline

### Btk horizon:

Hue—10YR

Value—5 or 6

Chroma—3

Texture—silty clay loam

Reaction—slightly alkaline or moderately alkaline

### Bk horizon:

Hue—10YR

Value—5 to 7, 5 or 6 moist

Chroma—2 or 3

Texture—silty clay loam or silt loam

Reaction—moderately alkaline

# Lower Bk horizon:

Hue—10YR

Value—6 to 8, 5 or 6 moist

Chroma—2 to 4, 3 moist

Texture—silt loam

Reaction—moderately alkaline or strongly alkaline

# Wiley Series

Depth class: Very deep Drainage class: Well drained Parent material: Loess Landform: Hills and plains Elevation: 4,400 to 6,000 feet Slope: 0 to 12 percent

MLRA: 67

Mean annual precipitation: 14 to 16 inches

Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Wiley silt loam, 3 to 12 percent slopes, about 2,050 feet east and 150 feet south of the northwest corner of sec. 22, T. 7 S., R. 56 W.

- Ap—0 to 4 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; slightly effervescent; moderately alkaline; clear smooth boundary.
- Bt—4 to 10 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; slightly effervescent; moderately alkaline; clear smooth boundary.
- Btk—10 to 18 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few faint clay films on faces of peds; few medium masses of calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.
- Bk—18 to 23 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium masses of calcium carbonate; violently effervescent; strongly alkaline; clear smooth boundary.
- C—23 to 60 inches; light yellowish brown (10YR 6/4) silt loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; violently effervescent; strongly alkaline.

### Range in Characteristics

### A horizon:

Hue—10YR

Value—4 or 5, 3 or 4 moist

Chroma—2 or 3

Texture—silt loam

Reaction—moderately alkaline

#### Bt horizon:

Hue—10YR

Value-5 or 6, 4 or 5 moist

Chroma—3

Texture—silt loam or silty clay loam

Reaction—moderately alkaline

### Btk horizon:

Hue—10YR

Value—6, 4 or 5 moist

Chroma—3

Texture—silt loam or silty clay loam

Reaction—moderately alkaline

### Bk horizon:

Hue—10YR

Value—5 or 6

Chroma—3

Texture—silt loam or silty clay loam

Reaction—moderately alkaline or strongly alkaline

#### C horizon:

Hue—10YR

Value-6 or 7, 5 or 6 moist

Chroma—3 or 4, 2 or 3 moist

Texture—silt loam

Reaction—moderately alkaline or strongly alkaline

# Wilid Series

Depth class: Very deep Drainage class: Well drained Parent material: Loess

Landform: Plains

Elevation: 4,400 to 6,000 feet

Slope: 0 to 3 percent

MLRA: 69

Mean annual precipitation: 11 to 14 inches Mean annual air temperature: 47 to 51 degrees F Mean annual soil temperature: 49 to 53 degrees F

Frost-free period: 135 to 155 days

# **Typical Pedon**

Wilid silt loam, 0 to 3 percent slopes, about 156 feet west and 520 feet south of the northeast corner of sec. 27, T. 16 S., R. 53 W.

- Ap—0 to 3 inches; brown (10YR 5/3) silt loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; strongly effervescent; moderately alkaline; abrupt smooth boundary.
- Btk1—3 to 8 inches; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; few fine roots; few very fine pores; few faint clay films on faces of peds; many fine masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

- Btk2—8 to 14 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate fine subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; few very fine roots; few very fine pores; few faint clay films on faces of peds; common fine masses of calcium carbonate; violently effervescent; moderately alkaline; clear wavy boundary.
- Bk1—14 to 21 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine pores; common fine masses of calcium carbonate; violently effervescent; strongly alkaline; gradual wavy boundary.
- Bk2—21 to 35 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine pores; common fine masses of calcium carbonate; violently effervescent; strongly alkaline; gradual wavy boundary.
- Bk3—35 to 60 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine pores; common fine masses of calcium carbonate; strongly effervescent; strongly alkaline.

# **Range in Characteristics**

### A horizon:

Hue—10YR

Value—4 to 6. 3 or 4 moist

Chroma—2 or 3

Texture—silt loam

Reaction—neutral to moderately alkaline

### Btk horizon:

Hue-10YR

Value—5 or 6, 4 or 5 moist

Chroma—3 or 4

Texture—silt loam or silty clay loam

Calcium carbonate equivalent—5 to 15 percent Reaction—moderately alkaline or strongly alkaline

#### Bk horizon:

Hue—10YR

Value—6 or 7, 5 or 6 moist

Chroma-2 to 4

Texture—silt loam or silty clay loam

Calcium carbonate equivalent—5 to 15 percent Reaction—moderately alkaline or strongly alkaline

# Lower Bk horizon:

Hue-10YR

Value—6 to 8, 5 or 6 moist

Chroma-2 to 4

Texture—silt loam, silty clay loam, or loam Calcium carbonate equivalent—5 to 15 percent Reaction—moderately alkaline or strongly alkaline

# Formation of the Soils

In this section, the soil-forming processes and the factors of soil formation are explained and discussed as they relate to the soils in Lincoln County. The factors of soil formation, or the soil environment, are external factors. The soil-forming processes, or pedogenic processes, are internal processes. The soil characteristics are determined by the interaction of the four major soil-forming processes and the five major factors of soil formation.

# **Soil-Forming Processes**

A soil-forming process is an internal sequence of events that intimately affects the soil in which it operates (Buol and others, 1980). The characteristics of the soil are determined by the interaction of four processes of soil formation: (1) additions; (2) losses; (3) translocations; and (4) transformations. A given process may tend to maintain the soil in its current condition or it may tend to change the soil (Buol and others, 1980).

The most obvious addition is organic matter. As soon as plant life begins to grow, organic matter begins to accumulate. Most organic matter additions to the surface increase the cation exchange capacity and nutrients. Other additions may come with rainfall or deposition by wind, such as windblown or eolian material.

Most losses occur by leaching. Water moving through the soil dissolves certain minerals and transports them into deeper layers. Some materials are also lost from the soil as a gas. Solid mineral and organic particles are lost by erosion. Such losses can be serious because the material lost is usually the most productive part of the soil profile.

Translocation means movement from one place to another. Leaching often is incomplete in low rainfall areas. Water starts moving down through the soil, dissolving soluble minerals as it goes. There isn't enough water, however, to move all the way through the soil. When the water stops moving, then evaporates, salts are left behind. Soil layers that have calcium carbonate form this way.

Transformations are changes that take place in the soil. Microorganisms that live in the soil feed on fresh

organic matter and change it into humus. Chemical weathering changes parent material. Some minerals are destroyed completely. Others are changed into new minerals. Other transformations can change the form of certain materials. Iron is present in the soil in different forms depending on the amount of water in the soil.

# **Factors of Soil Formation**

A factor of soil formation is an external agent, force, condition, or relationship, or combination of these, which influence, has influenced, or may influence the parent material of the soil, with the potential of changing it (Buol and others, 1980). The characteristics of the soil are determined by the interaction of five factors of soil formation: (1) the physical and mineralogical composition of the parent material; (2) the climate under which the parent material has accumulated and existed since accumulation; (3) the living organisms on and in the soil; (4) the relief; and (5) the length of time these forces have acted on the parent material. These factors are interdependent (Buol and others, 1980). Under different conditions, some factors are more effective than others. Different soils are formed where any one factor varies widely from place to place.

# **Parent Material**

Parent material is the unconsolidated material from which the soil develops. The varying physical and chemical properties of the different types of parent material result in the formation of different soils. Texture, color, consistence, and permeability are some of the soil properties that are influenced by parent material. There are three major parent materials in Lincoln County: (1) eolian material; (2) alluvium; and (3) residuum.

There are three major types of eolian parent material in Lincoln County. They are loess, loamy eolian material, and sandy eolian material. Loess is windblown silt, clay, and very fine sand. It was deposited by strong winds during late Pleistocene time. Soils formed in loess are high in silt and high in

nutrient reserve (Buol and others, 1980). Soils that formed in eolian materials have few rock fragments. Weld and Colby are examples of soils formed in loess. Loamy eolian material consists mostly of windblown sandy loam. Vona is an example of a soil formed in loamy eolian materials. Sandy eolian material consists of windblown loamy sand and sand. Sandy eolian material blew out of the Big Sandy Creek flood plain into dune areas. Valent is an example of a soil formed in sandy eolian material.

Alluvium is material deposited by water. Recent alluvium is commonly stratified sediments deposited on flood plains and drainageways. Soils formed in recent alluvium are weakly developed. Glenburg and Haverson are examples of soils that formed in recent alluvium. Some soils in Lincoln County are formed in alluvium that was originally deposited by streams flowing from the Rocky Mountains about 15 million years ago. Karval is an example of a soil that formed in old alluvium.

Some soils in Lincoln County have a mixed alluvium and eolian parent material. Fort Collins and Olney are examples of soils that have developed in loamy alluvium, modified by a thin mantle of loamy eolian deposits.

Residuum is weathered bedrock material that disintegrated in place. In this survey area, residuum is material weathered from sandstone or gray, clayey shale. Midway is an example of a soil formed in residuum.

### Climate

Climate influences the kind of vegetation that grows on soils, the level of biological activity in soils, and the physical and chemical weathering of parent material. Precipitation and temperature are important factors of soil formation. Wind velocity and humidity also have an influence.

The climate in Lincoln County is semiarid. It is characterized by extremes in temperature and precipitation. Winters are cold and dry and summers are hot. The northern part of the county generally receives about 14 to 16 inches of precipitation annually. The southern part of the county generally receives about 11 to 14 inches of precipitation annually. In winter the average temperature is 30 degrees F and in summer the average temperature is 73 degrees F.

The climate in Lincoln County is conducive to the growth of short prairie grasses. Materials such as calcium carbonates and clay move downward, but are not leached out of the soil. Keith is an example of soil that contains calcium carbonate and clay accumulation in the subsoil. High pH also is common in soils formed in this climate. Soils formed under high temperatures often have high clay content and soil colors tend to become less gray and more reddish.

# **Living Organisms**

Living organisms affect soil development by supplying upper layers with organic matter, recycling nutrients, and helping to prevent erosion. All of the soils of Lincoln County formed under native prairie grass. In native grassland the upper few inches of soil material contains a large number of fine roots. Decomposed organic matter has darkened the upper part of the soil and has influenced the development of soil structure. Fungi, bacteria, insects, earthworms, and burrowing animals eat and break down organic matter releasing plant nutrients. Some change certain elements, such as sulfur and nitrogen, into usable forms for plants. Earthworms, insects, and burrowing animals mix soils and commonly affect soil structure by making the soil more porous.

#### Relief

Relief is described as elevations or inequalities of the land surface considered collectively (Buol and others, 1980). It affects runoff, erosion, and drainage. If the other factors of soil formation are constant, an increase in slope causes increased runoff, increased erosion, and slower profile development. The degree to which rainfall enters the soil or runs off is regulated to some extent by relief. Midway is an example of a soil that commonly has high runoff, increased erosion, and weak development. Areas that have less slope commonly have less potential for runoff and erosion, and the soils tend to have pronounced pedogenic development. Platner is an example of a soil that has strong development. Apishapa formed in a depression and is an example of a soil that receives runoff water from surrounding areas and has deposition, instead of erosion, because of the relief.

# Time

Time zero for soils is described as the point at which a pedologically catastrophic event is completed, initiating a new cycle of soil development (Buol and others, 1980). All the other factors of soil formation—parent material, climate, living organisms, and topography—need time to influence the properties

of developing soils. Soil development, or aging, is reflected by such characteristics as degree of structure, evidence of clay movement, depth to calcium carbonate accumulations, and thickness of the solum.

Time is required for horizon formation. The longer a soil surface has been exposed to soil-forming agents like rain and growing plants, the greater the development of the soil profile. Soils in recent alluvial or windblown materials, or soils on steep slopes where

erosion has been active, may show very little horizon development. Glenberg is an example of a soil that formed in recent alluvium and has weak development. Soils on older, stable surfaces generally have well defined horizons because the rate of soil formation has exceeded the rate of geologic erosion or deposition. Weld is an example of a soil that formed on a stable landscape and has strong development. Soils become more leached, more acid, and more clayey with time.

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# **Glossary**

- **AC soil.** A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.
- Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.
- **Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.
- **Alkali (sodic) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.
- **Alluvial fan.** The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.
- **Alluvium.** Material, such as sand, silt, or clay, deposited on land by streams.
- Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.
- Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.
- **Area reclaim** (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.
- **Argillic horizon.** A subsoil horizon characterized by an accumulation of illuvial clay.
- **Aspect.** The direction in which a slope faces.
- **Association, soil.** A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.
- Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly

defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

- **Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below
- **Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- **Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- **Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- **Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.
- **Bottom land.** The normal flood plain of a stream, subject to flooding.
- **Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- **Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

- Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- **Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- **Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- **Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- **Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- **Chiseling.** Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
- Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
- **Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- **Claypan.** A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

- Coarse textured soil. Sand or loamy sand.
- **Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
- **Colluvium.** Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- **Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
- Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

- **Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.
- Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."
- **Contour stripcropping.** Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.
- **Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.
- **Corrosion.** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
- **Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
- **Cropping system.** Growing crops according to a planned system of rotation and management practices.
- **Crop residue management.** Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
- **Cutbanks cave** (in tables). The walls of excavations tend to cave in or slough.
- **Decreasers.** The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.
- **Deferred grazing.** Postponing grazing or resting grazing land for a prescribed period.
- **Dense layer** (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.
- **Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.
- **Depth to rock** (in tables). Bedrock is too near the surface for the specified use.
- Diversion (or diversion terrace). A ridge of earth,

- generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
- Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."
- **Drainage, surface.** Runoff, or surface flow of water, from an area.
- Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.
- **Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
- **Endosaturation.** A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
- **Eolian soil material.** Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
- **Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
- **Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
- Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

  Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

- Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.
- **Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
- **Excess sodium** (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.
- Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.
- Fast intake (in tables). The rapid movement of water into the soil.
- **Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called normal field capacity, normal moisture capacity, or capillary capacity.
- Fine textured soil. Sandy clay, silty clay, or clay.

  Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
- **Forb.** Any herbaceous plant not a grass or a sedge. **Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.
- **Frost action** (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.
- **Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- **Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

- **Grassed waterway.** A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
- **Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- **Green manure crop** (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
- **Ground water.** Water filling all the unblocked pores of the material below the water table.
- Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
- Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.
- High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.
- Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
- Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:
  - O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon.*—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon.*—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

- Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.
- **Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.
- **Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.
- **Increasers.** Species in the climax vegetation that increase in amount as the more desirable plants

- are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.
- **Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.
- **Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.
- Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.
- Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.
- Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.
- Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.
- **K**<sub>sat</sub>. Saturated hydraulic conductivity. (See Permeability.)
- **Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.
- **Leaching.** The removal of soluble material from soil or other material by percolating water.
- Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at <sup>1</sup>/<sub>3</sub>- or <sup>1</sup>/<sub>10</sub>-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.
- **Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.
- **Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Loess.** Fine grained material, dominantly of silt-sized particles, deposited by wind.

- **Low strength.** The soil is not strong enough to support loads.
- Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.
- **Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.
- **Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.
- **Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
- **Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.
- **Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.
- **Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- **Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- **Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—few, common, and many; size—fine, medium, and coarse; and contrast—faint, distinct, and prominent. The size measurements are of the diameter along the greatest dimension. Fine indicates less than 5 millimeters (about 0.2 inch); medium, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and coarse, more than 15 millimeters (about 0.6 inch).
- **Mountain.** A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep

- sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.
- **Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.
- **Natric horizon.** A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.
- **Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)
- Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.
- **Nose slope.** A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.
- **Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.
- Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

- **Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.
- **Parent material.** The unconsolidated organic and mineral material in which soil forms.
- **Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.
- Pedon. The smallest volume that can be called "a soil."
  A pedon is three dimensional and large enough
  to permit study of all horizons. Its area ranges
  from about 10 to 100 square feet (1 square meter
  to 10 square meters), depending on the variability
  of the soil.

- Percolation. The movement of water through the soil.
  Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.
- Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

- **Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
- **pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
- **Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
- Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
- **Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.
- **Playa.** The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.
- **Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
- **Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- **Potential native plant community.** See Climax plant community.

# Potential rooting depth (effective rooting depth).

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

- **Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
- **Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.
- **Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.
- Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.
- Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.
- Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

### Redoximorphic concentrations. Nodules,

concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

**Redoximorphic depletions.** Low-chroma zones from which iron and manganese oxide or a combination

of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

- Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha, alphadipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.
- Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.
- **Relief.** The elevations or inequalities of a land surface, considered collectively.
- Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.
- **Rill.** A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.
- **Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
- **Root zone.** The part of the soil that can be penetrated by plant roots.
- Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called groundwater runoff or seepage flow from ground water.
- **Saline soil.** A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.
- **Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.
- **Sandstone.** Sedimentary rock containing dominantly sand-sized particles.
- Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.
- **Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of

- saturation, the water flows from the soil matrix into an unlined auger hole.
- Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.
- **Seepage** (in tables). The movement of water through the soil. Seepage adversely affects the specified use.
- **Sequum.** A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)
- **Series, soil.** A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
- **Shale.** Sedimentary rock formed by the hardening of a clay deposit.
- **Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- **Shoulder.** The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.
- Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
- **Side slope.** A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.
- Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

- **Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.
- **Slow intake** (in tables). The slow movement of water into the soil.
- **Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.
- **Sodic (alkali) soil.** A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.
- **Sodicity.** The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na<sup>+</sup> to Ca<sup>++</sup> + Mg<sup>++</sup>. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

- Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.
- **Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.
- **Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time
- Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E,

- and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.
- **Stripcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.
- Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are either single grained (each grain by itself, as in dune sand) or massive (the particles adhering without any regular cleavage, as in many hardpans).
- **Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.
- **Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.
- **Substratum.** The part of the soil below the solum. **Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.
- Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.
- **Summit.** The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.
- Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."
- **Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
- Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system.

  Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and

- behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.
- Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- **Terrace** (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
- Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
- **Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.
- **Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- **Toeslope.** The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are

- constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closeddepression floors.
- **Too arid** (in tables). The soil is dry most of the time, and vegetation is difficult to establish.
- **Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- **Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- **Upland.** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- **Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.
- **Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

# **Tables**

Table 1.--Temperature and Precipitation
(Recorded in the period 1961-90 at Genoa, Colorado)

	   Te	emperatu	re	 	Pi	recipitat	ion	
		İ	İ		30 percei	nt chance	Average	İ
	i	i	i	j	will	have	number of	Average
	i	I	I	i			days with	total
Month	Average	Average	Average	Average	Less	More	0.10 inch	snowfall
	daily	daily	i	İ	than	than	or more	i
	maximum	mimimum	i	j		İ	i	i
	°F	°F	°F	In	In	In	Ī	In
	i	i	i	j		İ	i	i
January	35.2	10.1	22.6	0.28	0.14	0.35	1	3.6
February	41.5	15.6	28.6	0.30	0.11	0.37	0	2.6
March	44.8	16.3	30.5	0.90	0.47	1.11	2	7.1
April	58.0	26.7	42.3	1.13	0.56	1.38	3	3.7
May	69.0	36.9	52.9	2.81	1.73	3.40	5	1.2
June	84.5	49.7	67.1	2.34	1.49	2.82	5	0.0
July	85.6	52.6	69.1	2.66	1.85	3.17	6	0.0
August	84.6	53.7	69.2	2.54	1.78	3.02	5	0.0
September	70.8	42.0	56.4	1.15	0.62	1.40	3	0.8
October	58.6	31.8	45.2	0.54	0.24	0.66	1	2.8
November	44.2	22.0	33.1	0.43	0.22	0.54	1	4.3
December	39.7	14.7	27.2	0.29	0.09	0.37	1	3.6
							[	
							I	
Annual					13.39	16.58		
							I	
Average-	59.7	31.0	45.4					
							I	
Total				15.38			33	29.6

Table 2.--Temperature and Precipitation

(Recorded in the period 1961-90 at Karval, Colorado)

	l I							
		emperatu	re		Pre	ecipitati	on	
					30 perce	nt chance	Average	
					will	have	number of	Average
	I	I					days with	total
Month	Average	Average	Average	Average	Less	More	0.10 inch	snowfal
	daily	daily			than	than	or more	
	maximum	minimum				l		
	°F	°F	°F	In	In	In		In
January	43.4	15.9	29.7	0.34	0.07	0.42	1	3.7
February	44.6	18.4	31.5	0.28	0.04	0.35	1	2.3
March	53.3	25.5	39.4	0.81	0.32	1.01	2	3.5
April	64.0	34.2	49.1	0.90	0.34	1.12	2	1.4
May	71.1	43.5	57.3	2.30	1.16	2.85	4	0.7
June	81.8	53.1	67.5	1.60	1.03	1.96	3	0.0
July	88.5	58.2	73.3	2.58	1.56	3.13	4	0.0
August	86.4	57.4	71.9	1.78	0.81	2.17	3	0.0
September	78.3	48.3	63.3	1.00	0.53	1.23	2	0.3
October	66.5	35.6	51.1	0.65	0.23	0.83	1	0.8
November	53.6	24.9	39.2	0.50	0.11	0.61	1	2.9
December	42.3	15.4	28.9	0.34	0.08	0.44	0	3.4
Annual					10.79	14.77	ļ	
_						l		I
Average-	64.5	35.9	50.2					
Total	l I	l I	l I	   13.07		l I	l l 24	   18.9
IOCAI	- <b></b>	 	 	13.07   	<b>_</b>	ı I	44	1 10.9

Table 3.--Growing Season

(Recorded in the period 1948-99)

	 	Temperature					
Probability	24 <sup>O</sup> F or higher	28 OF or higher	32 OF or higher				
_			<u> </u>				
	ı   Begir	nning and ending da	ates				
	Gro	owing season length	ı				
		Growing beadon rengen					
50 percent *	4/12 to 10/23	4/30 to 10/10	5/5 to 10/6				
	194 days	163 days	153 days				
	İ	i i	-				
70 percent *	4/10 to 10/25	4/26 to 10/14	5/2 to 10/9				
	197 days	171 days	160 days				
	İ	İ	_				

 $<sup>\ ^{\</sup>star}$  Percent chance of the growing season occurring between the beginning and ending dates.

Table 4.--Acreage and Proportionate Extent of the Soils

Map	   Soil name	Acres	  Percent
symbol			<u>i</u>
101	Apishapa clay loam, 0 to 3 percent slopes, rarely ponded		
102	Arvada clay loam, 0 to 5 percent slopes		:
103 104	Ascalon sandy loam, 3 to 5 percent slopes		
105	Ascalon sandy loam, 5 to 9 percent slopes		:
106	Ascalon sandy loam, dry, 1 to 3 percent slopes		:
107	Ascalon sandy loam, dry, 3 to 5 percent slopes		:
108	Ascalon sandy loam, dry, 5 to 9 percent slopes	1,251	*
109	Ascalon-Haxtun complex, 0 to 3 percent slopes	15,739	1.0
110	Ascalon-Haxtun complex, dry, 0 to 3 percent slopes		0.7
111	Bacid silt loam, 0 to 2 percent slopes		:
112	Bankard-Glenberg complex, 0 to 3 percent slopes, occasionally flooded		:
113	Bijou loamy sand, 1 to 3 percent slopes    Bijou loamy sand, moist, 1 to 3 percent slopes		:
114 115	Bijou loamy sand, moist, 1 to 3 percent slopes  Bijou loamy sand, moist, 3 to 12 percent slopes		:
116	Blakeland loamy sand, 3 to 12 percent slopes		!
117	Bresser sandy loam, 1 to 5 percent slopes		
118	Campo silt loam, 0 to 2 percent slopes		:
119	Canyon-Rock outcrop complex, 5 to 60 percent slopes	221	*
120	Colby silt loam, 1 to 3 percent slopes	4,377	0.3
121	Colby silt loam, 3 to 12 percent slopes		1.3
122	Colby-Weld silt loams, 1 to 5 percent slopes		3.0
123	Firstview loamy sand, 0 to 3 percent slopes		:
124	Fort Collins loam, 1 to 3 percent slopes		:
125	Fort Collins loam, 3 to 5 percent slopes   Fort Collins-Karval complex, 5 to 25 percent slopes		:
126 127	Fort Collins-Platner loams, 1 to 5 percent slopes		:
128	Fort Collins-Razor, moist, complex, 5 to 15 percent slopes		:
129	Fort loam, 1 to 3 percent slopes		:
130	Fort loam, 3 to 5 percent slopes		:
131	Fort-Karval complex, 5 to 25 percent slopes		0.3
132	Fort-Razor complex, 5 to 15 percent slopes	1,734	0.1
133	Haversid silt loam, 0 to 3 percent slopes, rarely flooded		0.4
134	Haverson loam, 0 to 3 percent slopes, rarely flooded		:
135	Haxtun loamy sand, 0 to 3 percent slopes		:
136 137	Haxtun loamy sand, dry, 0 to 3 percent slopes    Haxtun, dry-Olney loamy sands, 0 to 3 percent slopes		:
138	Haxtum-Olnest loamy sands, 0 to 3 percent slopes		:
139	Keith silt loam, 1 to 3 percent slopes		:
140	Keith silt loam, 3 to 10 percent slopes		:
141	Kim loam, 1 to 3 percent slopes		*
142	Kim loam, 3 to 12 percent slopes	5,261	0.3
143	Kimst loam, 1 to 3 percent slopes		*
144	Kimst loam, 3 to 12 percent slopes		:
145	Las Animas sandy loam, 0 to 3 percent slopes, occasionally flooded		
146	Limon clay, 0 to 3 percent slopes, rarely flooded		:
147 148	Limon clay, moist, 0 to 3 percent slopes, rarely flooded		:
149	Manzanst clay loam, 0 to 3 percent slopes, rarely flooded		:
150	Manzanst clay loam, 1 to 5 percent slopes		
151	Midway clay loam, 1 to 5 percent slopes		:
152	Midway clay loam, moist, 1 to 5 percent slopes		:
153	Midway-Razor clay loams, 5 to 15 percent slopes	7,938	0.5
154	Midway-Razor clay loams, moist, 5 to 15 percent slopes	44,390	2.7
155	Midway-Rock outcrop complex, 5 to 40 percent slopes		•
156	Midway-Rock outcrop complex, moist, 5 to 40 percent slopes		:
157	Nunn clay loam, 3 to 5 percent slopes		•
158	Nunn-Sampson, rarely flooded, complex, 0 to 3 percent slopes		:
159 160	Nunn-Sampson, rarely flooded, complex, dry, 0 to 3 percent slopes  Olnest loamy sand, 1 to 5 percent slopes		:
161	Olnest sandy loam, 1 to 3 percent slopes		:
162	Olnest sandy loam, 3 to 5 percent slopes		:
163	Olnest sandy loam, 5 to 12 percent slopes		:

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	  Percent 
164		9,646	0.6
165	Olney sandy loam, 1 to 3 percent slopes	32,575	:
166	Olney sandy loam, 3 to 5 percent slopes	346	•
167	Olney sandy loam, 5 to 12 percent slopes	8,434	
168	Olney-Midway complex, 3 to 12 percent slopes	1,886	0.1
169	Otero sandy loam, 1 to 5 percent slopes	4,083	0.2
170	Oterodry fine sandy loam, 1 to 5 percent slopes	2,617	•
171	Oterodry fine sandy loam, 5 to 9 percent slopes	5,944	:
172	Platner loam, 0 to 3 percent slopes	35,623	:
173	Placest less 0 to 1 percent slopes	34,975	:
174 175	Pleasant loam, 0 to 1 percent slopes, rarely ponded  Rago silt loam, 0 to 2 percent slopes, rarely flooded	899 14,455	!
176	Rago silt loam, dry, 0 to 2 percent slopes, rarely flooded	674	:
177	Razor clay loam, 1 to 5 percent slopes	19,125	!
178	Razor clay loam, moist, 1 to 5 percent slopes	30,140	:
179	Sampson loam, 0 to 2 percent slopes, rarely flooded	13,981	:
180	Sampson loam, dry, 0 to 2 percent slopes, rarely flooded	988	:
181	Satanta loam, 1 to 3 percent slopes	6,264	0.4
182	Satanta loam, dry, 1 to 3 percent slopes	15,412	0.9
183	Seldom sandy loam, 0 to 3 percent slopes, rarely flooded	2,005	0.1
184	Shingle-Midway complex, 1 to 9 percent slopes	165	•
185	Shingle-Midway complex, moist, 1 to 9 percent slopes	6,472	•
186	Sundance loamy sand, 1 to 3 percent slopes	2,225	:
187	Table Mountain loam, 0 to 2 percent slopes, rarely flooded	3,374	:
188	Travessilla-Rock outcrop complex, 6 to 60 percent slopes	2,838	:
189 190	Truckton sandy loam, 1 to 5 percent slopes   Truckton sandy loam, 5 to 9 percent slopes	7,969	:
191	Truckton sandy loam, dry, 1 to 5 percent slopes	4,042 8,062	:
192	Truckton sandy loam, dry, 1 to 9 percent slopes	3,576	:
193	Valent sand, 3 to 20 percent slopes	59,903	:
194	Valent-Bijou complex, 1 to 12 percent slopes	39,331	:
195	Valent-Vona complex, 3 to 25 percent slopes	20,716	:
196	Valent-Vonid complex, 3 to 25 percent slopes	14,288	•
197	Vona loamy sand, 1 to 9 percent slopes	8,218	0.5
198	Vona sandy loam, 1 to 5 percent slopes	24,415	1.5
199	Vona sandy loam, 5 to 12 percent slopes	8,991	0.5
200	Vona-Karval-Midway, moist, complex, 5 to 25 percent slopes	8,293	0.5
201	Vona-Midway, moist, complex, 3 to 12 percent slopes	1,869	:
202	Vona-Seldom sandy loams, 3 to 25 percent slopes	1,801	:
203	Vonid loamy sand, 1 to 9 percent slopes	26,426	:
204 205	Vonid sandy loam, 1 to 5 percent slopes   Vonid sandy loam, 5 to 12 percent slopes	32,201	:
205	Vonid-Karval-Midway complex, 5 to 25 percent slopes	10,774 13,013	:
207	Vonid-Midway complex, 3 to 12 percent slopes	5,594	:
207	Vonid-Seldom sandy loams, 3 to 25 percent slopes	4,075	•
209	Wages loam, 2 to 6 percent slopes	22,558	:
210	Wages loam, 6 to 12 percent slopes	16,163	:
211	Wages loam, dry, 1 to 5 percent slopes	1,354	:
212	Wages-Karval complex, 6 to 15 percent slopes	14,206	0.9
213	Weld silt loam, 0 to 2 percent slopes	120,275	7.3
214	Weld silt loam, dry, 0 to 2 percent slopes	74	:
215	Wiley silt loam, 0 to 3 percent slopes	44,138	:
216	Wiley silt loam, 3 to 12 percent slopes	12,596	:
217	Wilid silt loam, 0 to 3 percent slopes	29,120	:
218	Water   Gravel pits	510	*   *
219 220	Access denied	183 37,025	2.2
	   Total	1,654,298	100.0

<sup>\*</sup> Less than 0.1 percent.

### Table 5.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map	   Soil name
symbol	
	<u></u>
111	Bacid silt loam, 0 to 2 percent slopes (where irrigated)
118	Campo silt loam, 0 to 2 percent slopes (where irrigated)
124	Fort Collins loam, 1 to 3 percent slopes (where irrigated)
125	Fort Collins loam, 3 to 5 percent slopes (where irrigated)
127	Fort Collins-Platner loams, 1 to 5 percent slopes (where irrigated)
129	Fort loam, 1 to 3 percent slopes (where irrigated)
130	Fort loam, 3 to 5 percent slopes (where irrigated)
139	Keith silt loam, 1 to 3 percent slopes (where irrigated)
157	Nunn clay loam, 3 to 5 percent slopes (where irrigated)
158	Nunn-Sampson, rarely flooded, complex, 0 to 3 percent slopes (where irrigated)
159	Nunn-Sampson, rarely flooded, complex, dry, 0 to 3 percent slopes (where irrigated)
172	Platner loam, 0 to 3 percent slopes (where irrigated)
173	Platner-Ascalon complex, 0 to 3 percent slopes (where irrigated)
179	Sampson loam, 0 to 2 percent slopes, rarely flooded (where irrigated)
180	Sampson loam, dry, 0 to 2 percent slopes, rarely flooded (where irrigated)
181	Satanta loam, 1 to 3 percent slopes (where irrigated)
182	Satanta loam, dry, 1 to 3 percent slopes (where irrigated)
187	Table Mountain loam, 0 to 2 percent slopes, rarely flooded (where irrigated)
209	Wages loam, 2 to 6 percent slopes (where irrigated)
211	Wages loam, dry, 1 to 5 percent slopes (where irrigated)
213	Weld silt loam, 0 to 2 percent slopes (where irrigated)
214	Weld silt loam, dry, 0 to 2 percent slopes (where irrigated)

Table 6.--Land Capability and Yields per Acre of Crops

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land     capability	Corn	Grain	   Millet 	   Sunflowers 	   Winter   wheat-fallow
		Bu	Bu	Bu	Lbs	Bu
			[ ]		ļ.	ļ.
101: Apishapa	4w				 	 
	i i		i i	İ	İ	İ
102: Arvada	   7s			 	 	 
Arvada	/s   			<del></del> 	 	 
103:	İ		į į		į	İ
Ascalon	3c	57	30	22 	1,110	24
104:			i i		İ	İ
Ascalon	3e			20		22
105:				<u> </u>	 	 
Ascalon	6e		i i		i	i
106	! !					
106: Ascalon	   4c	43	20	   18	   700	   20
	i		i i		İ	İ
107:	1 1			16	1	10
Ascalon	4c			16 	 	18 
108:	i i		i i	İ	İ	İ
Ascalon	6e					
109:					! 	 
Ascalon	3c	57	30	22	1,110	24
Haxtun	   3e	   57	30	   30	   1,110	   30
naxcui	3e   	37	30	30	1,110	30
110:	İ		į į		į	İ
Ascalon	4c	43	20	18 	700 l	20
Haxtun	4c		20	25	i	20
			[ ]		ļ.	ļ.
111: Bacid	4c	43	20	   25	   700	   20
	i i		i i		İ	İ
112: Bankard	6-			 	 	 
Bankard	6s			<del></del> 	 	 
Glenberg	3e		20	22	i	18
113:				İ		
Bijou	4c	43	20	25	700	1 18
			į į		į	į
114: Bijou	   3e	57	30	   25	   1,110	   20
21,00	30	, <i>3,</i>		23		
115:			ļ .			<u> </u>
Bijou	6e	 		 	 	 
116:			i	İ	İ	i
Blakeland	6e					
117:				 	 	 
Bresser	4c	43	20	28	700	22
118:				 	 	
Campo	4c	43	20	   26	700	   20
	i		i i		i	i

Table 6.--Land Capability and Yields per Acre of Crops--Continued

Map symbol	Land	Corn	   Grain	   Millet	   Sunflowers	•
and soil name	capability	l Bu	sorghum Bu	l Bu	Lbs	wheat-fallow   Bu
		50	50	50		50
119: Canyon	   7s	 	 	 	 	 
Rock outcrop	İ	   	   	   	   	   
_		İ	į		į	į
120: Colby	   3e 	   57 	   30 	   30 	   1,110 	   30 
121: Colby	     6e	   	 	   	   	   
122:			į			
Colby	4e 	43 	20 	22 	700 	25 
Weld	3c	57	30	30 	1,110 	35 
123: Firstview	   7s 	   	   	   	   	   
124: Fort Collins	   3c	   57	   30	   30	     1,110	   30
125: Fort Collins	     4e	   	     20	     20	   	     25
126: Fort Collins	     6e	   	 	   	   	   
Karval	6e					
127:	 	 	 	 	I I	 
Fort Collins	4e 	 	_   20 	20 	i I	25 
Platner	4e 	43 	25 	25 	700 	30 
128: Fort Collins	   6e	 	 	 	 	 
Razor	   6e	 	 	 	 	 
129: Fort	     4c	 	     20	     25	     700	 
130: Fort	     4e	 	   	     22	 	     25
131:	 	 	 	 	 	 
Fort	6e 	 	 	 	 	 
Karval	6e 	 	 	 	 	 
132: Fort	     6e	   		   	   	 
Razor	   6e 	   	 	   	 	 
133: Haversid	     6c	   	   	   	   	   
134: Haverson	     3e	     57	     30	     30	     1,110	     25
135: Haxtun	     3e 	     57 	     30	     30	     1,110 	     30
		•		•	•	•

Table 6.--Land Capability and Yields per Acre of Crops--Continued

			ı	I		
Map symbol and soil name	Land capability	   Corn 	   Grain   sorghum	   Millet 	   Sunflowers 	   Winter   wheat-fallow
		Bu	Bu	Bu	Lbs	Bu
136:		İ		l i		
Haxtun	4c	   	   20 	   25 	   	   20 
137: Haxtun	4c	 	     20	   25	 	_     20
Olney	   4c	 	 	   22	 	   18
138:		 	 	 	 	 
Haxtun	3e	   57 	   30 	   30 	   1,110 	   30 
Olnest	3e	57	30 	30 	1,110 	_   25 
139: Keith	3e	   57	   30	30	   1,110	30
140:		 	 	 	l i	İ
Keith	6e	   	   	   	   	   
141:		l	ļ i	l		
Kim	4c	57 	30 	30 	1,110 	26 
142: Kim	6e	 	 	 	 	 
142.						
143: Kimst	   3e 	   57 	   30 	   30 	   1,110 	   25 
144:			İ	İ	İ	
Kimst	6e	 	 	 	 	 
145: Las Animas	4w	i I	i I	 	 	 
	İ	İ	İ	İ	İ	İ
146: Limon	6s	 	 	 	 	 
147:			 	 	 	 
Limon	6s	i	i I	 	 	 I
148:	İ	İ	į	İ	İ	İ
Manzanola	4e	 	 	16 	 	16 
149: Manzanst	   3e	 	 	 	 	   26
Manizanst	3e 	 		 	 	26
150: Manzanst	   3e	 	 	 	 	   26
			İ	İ	 	===
151: Midway	6e	 	 	 	 	
152:		 	 	 	 	 
Midway	6e	 	 	 	   	 
153:		' 		' 	' 	
Midway	6e	 	 	 	 	 
Razor	6e	   	   	 	   	 
154:	İ	i İ	i İ	i İ	i İ	İ
Midway	6e	 	 	 	 	 
Razor	6e	   	   	   	 	 

Table 6.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	   Land   capability	   Corn 	   Grain     sorghum	   Millet 	   Sunflowers 	   Winter   wheat-fallow
	ĺ	Bu	Bu	Bu	Lbs	Bu
155:	İ	 			 	 
Midway	6e					 
Rock outcrop	   8s 	   	 		 	   
156:		! 	<u> </u>		İ	İ
Midway	6e	 	 	 	 	 
Rock outcrop	8s	 	i i		 	 I
157:	İ	İ	i i		İ	İ
Nunn	] 3e	57 	30   	28 	1,110 	28 
158:		İ	į į		į	į
Nunn	3c 	57 	] 30   	30 	1,110 	30 
Sampson	3c	57 	30	25	1,110	28 
159:		! 	<u> </u>		i	 
Nunn	4c	 		22	 	22 
Sampson	4c 	43 	20	20	700 	25 
160:		! 	<u> </u>		İ	İ
Olnest	3e 	57 	30   	30 	1,110 	25 
161:	İ	İ	i i		İ	İ
Olnest	] 3e	57 	] 30   	30 	1,110 	25 
162:	İ	İ	i i		İ	İ
Olnest	4e 	43 	20   	25 	700 	20 
163:			į į		ĺ	İ
Olnest	6e 	 	 	 	 	 
164:						
Olney	4c 	 	 	22 	 	18 
165:			   20	   22		10
Olney	4c 	 	20	22	 	18 
166:						
Olney	4e 	 	 	22 	 	15 
167:		İ	į į		į	į
Olney	6e 	 		 	 	 
168:		İ	i i			İ
Olney	6e 	 			 	
Midway	6e		i i			 
169:	 	! 		! 	! 	! 
Otero	4e 	43	20	25	700	
170:		 			<u> </u>	İ
Oterodry	4e 	 		 	 	 
171:		İ	i i	İ	İ	i
Oterodry	6e 	 			 	 
172:		 				 
Platner	3c	57 	30	30 I	1,110 	35 
	I	I	1	ı	I	I

Table 6.--Land Capability and Yields per Acre of Crops--Continued

	I		1			
Map symbol and soil name	   Land   capability	   Corn 	   Grain   sorghum	   Millet 	   Sunflowers 	   Winter   wheat-fallow
		Bu	Bu	Bu	Lbs	Bu Bu
173:	 	 	 	 	 	 
Platner	3c	57	30	30	1,110	35
Ascalon	   3c   	   57 	   30 	   22 	   1,110 	   24 
174: Pleasant	   4w		 		 	 
175: Rago	     3c	     57	     30	     30	     1,110	     32
176: Rago	 	     43	     20	     25 	     700	     25 
177: Razor	   6s 	 	   	 	   	   
178: Razor	6s	   	   	   	   	   
179: Sampson	   3c	57	   30	   25 	   1,110 	   28 
180: Sampson	   4c	   43 	   20 	     20	   700	   25 
181: Satanta	   3c	57	   30 	   30 	     1,110	   29 
182: Satanta	   4c	   43 	   20 	     25	   700	   25 
183: Seldom	   3e	   	   	   	   	   
184: Shingle	   6e	   	   	   	   	   
Midway	6e					
185: Shingle	     6e	   	   	   	   	   
Midway	   6e	 	 	 	 	 
186: Sundance	 	   	   	     18	 	     20
187: Table Mountain	 	     57	     30	     25 	 	     27 
188: Travessilla	   7e	 	 	 	   	   
Rock outcrop	8s					
189: Truckton	     3e	   	   	     20	     700	     22 
190: Truckton	     6e   	     	   	   	   	 
191: Truckton	   4c	   	   	     20 	     700	     18 

Table 6.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Land capability	Corn	Grain sorghum	   Millet	   Sunflowers 	   Winter   wheat-fallow
		Bu	Bu	Bu	Lbs	Bu
192: Truckton	     6e	   	   		   	   
193: Valent	6e	   	   		   	   
194: Valent	6e	   	 	   	   	   
Bijou	6e		j			
195: Valent	   6e	   			   	   
Vona	6e				 	 
196: Valent	     6e	   	   		 	   
Vonid	6e		ļ		 	 
197: Vona	     6e	   	   	   	   	   
198: Vona	     3e	     57	     25	     30	     1,110	 
199: Vona	   6e	   	   		   	   
200: Vona	   6e	 	 		   	   
Karval	6e				 	 
Midway	6e				 	 
201: Vona	6e	   			   	   
Midway	6e				 	 
202: Vona	     6e	   			   	   
Seldom	6e				 	 
203: Vonid	   6e	   	   		 	 
204: Vonid	 	     43	     20	     25	     700	     18
205: Vonid	     6e	   	   		   	   
206: Vonid	     6e	   	   		   	   
Karval	   6e	 			 	 
Midway	6e	   	   		   	   

Table 6.--Land Capability and Yields per Acre of Crops--Continued

	I	I	I	I	I	 I
Map symbol	Land	Corn	Grain	Millet	Sunflowers	Winter
and soil name	capability		sorghum			wheat-fallow
	!	Bu	Bu	Bu	Lbs	Bu
207:		l i		 		 
Vonid	l   6e	l I		l I	l I	l I
VOILIG	0e	 		 	I	 
Midway	6e	   	i i	i	 	 
208:	İ	İ	į	İ	İ	İ
Vonid	6e					
Seldom	   6e	 		 	 	 
209:	l I	l I	 	l I	! !	 
Wages	4e	43	20	20	700	27
	İ	İ	į i	İ	İ	İ
210:	1				l	
Wages	6e				ļ	
211:		 		 	 	l I
Wages	l   4e	l   43	l l 20	l   20	l l 700	l   25
	1	-5	20	=0	1	, <u>-</u> 3
212:	İ	İ	į i	İ	İ	İ
Wages	6e					
_					<u> </u>	
Karval	6e					
213:	 	 	 	 	! 	 
Weld	3c	57	30	30	1,110	35
	ĺ	İ		ĺ	ĺ	ĺ
214:		l		l	l	
Weld	4c	43	20	25	700	25
215:	l i	 		 	 	 
Wiley	l 3e	l   57	30	l   27	   1,110	I I 30
	İ			· 	-,	i I
216:	İ	İ	į	İ	İ	İ
Wiley	6e					
01.5						
217: Wilid	   4c	l l 43	   20	l l 22	l I 700	   28
WIIIQ	<del>1</del> 0	<del>1</del> 3	20	<u>22</u> 	700 	<u>2</u> 0 
218:	i I	! 		! 	i I	! 
Water.	l	İ			İ	İ
		l				l
219:					<u> </u>	<u> </u>
Gravel pits	8s					
220:	I I	I 	 	 	I I	I I
Access denied.	İ	i İ		i I	i	İ
	İ				İ	<u> </u>

Table 7.--General Crop Production Index

(See text for an explanation of this index.)

Map symbol	Soil name	Crop ind
.01	  Apishapa clay loam, 0 to 3 percent slopes, rarely ponded	7
.02	Arvada clay loam, 0 to 5 percent slopes	
.03	Ascalon sandy loam, 1 to 3 percent slopes	
04	Ascalon sandy loam, 3 to 5 percent slopes	
05	Ascalon sandy loam, 5 to 9 percent slopes	44
06	Ascalon sandy loam, dry, 1 to 3 percent slopes	44
07	Ascalon sandy loam, dry, 3 to 5 percent slopes	43
80	Ascalon sandy loam, dry, 5 to 9 percent slopes	42
09	Ascalon-Haxtun complex, 0 to 3 percent slopes	
10	Ascalon-Haxtun complex, dry, 0 to 3 percent slopes	
11	Bacid silt loam, 0 to 2 percent slopes	44
12	Bankard-Glenberg complex, 0 to 3 percent slopes, occasionally flooded	
13	Bijou loamy sand, 1 to 3 percent slopes	
14	Bijou loamy sand, moist, 1 to 3 percent slopes	
15	Bijou loamy sand, moist, 3 to 12 percent slopes	
16	Blakeland loamy sand, 3 to 12 percent slopes	
17	Bresser sandy loam, 1 to 5 percent slopes	
18	Campo silt loam, 0 to 2 percent slopes	
L9	Canyon-Rock outcrop complex, 5 to 60 percent slopes	
20	Colby silt loam, 1 to 3 percent slopes	
21	Colby silt loam, 3 to 12 percent slopes	
22	Colby-Weld silt loams, 1 to 5 percent slopes	
23	Firstview loamy sand, 0 to 3 percent slopes	
24	Fort Collins loam, 1 to 3 percent slopes	
25	Fort Collins loam, 3 to 5 percent slopes	
26	Fort Collins-Karval complex, 5 to 25 percent slopes	
27	Fort Colling Page	
28 29	Fort Collins-Razor, moist, complex, 5 to 15 percent slopes   Fort loam, 1 to 3 percent slopes	
30	Fort loam, 3 to 5 percent slopes	
31	Fort-Karval complex, 5 to 25 percent slopes	
32	Fort-Razor complex, 5 to 15 percent slopes	
33	Haversid silt loam, 0 to 3 percent slopes, rarely flooded	
34	Haverson loam, 0 to 3 percent slopes, rarely flooded	
35	Haxtun loamy sand, 0 to 3 percent slopes	
36	Haxtun loamy sand, dry, 0 to 3 percent slopes	
37	Haxtun, dry-Olney loamy sands, 0 to 3 percent slopes	
88	Haxtun-Olnest loamy sands, 0 to 3 percent slopes	
39	Keith silt loam, 1 to 3 percent slopes	
10	Keith silt loam, 3 to 10 percent slopes	
1	Kim loam, 1 to 3 percent slopes	
12	Kim loam, 3 to 12 percent slopes	
13	Kimst loam, 1 to 3 percent slopes	40
4	Kimst loam, 3 to 12 percent slopes	36
15	Las Animas sandy loam, 0 to 3 percent slopes, occasionally flooded	27
<u> 1</u> 6	Limon clay, 0 to 3 percent slopes, rarely flooded	33
7	Limon clay, moist, 0 to 3 percent slopes, rarely flooded	35
8	Manzanola clay loam, 1 to 5 percent slopes	38
9	Manzanst clay loam, 0 to 3 percent slopes, rarely flooded	38
0	Manzanst clay loam, 1 to 5 percent slopes	
51	Midway clay loam, 1 to 5 percent slopes	
52	Midway clay loam, moist, 1 to 5 percent slopes	9
53	Midway-Razor clay loams, 5 to 15 percent slopes	
54	Midway-Razor clay loams, moist, 5 to 15 percent slopes	
55	Midway-Rock outcrop complex, 5 to 40 percent slopes	
56	Midway-Rock outcrop complex, moist, 5 to 40 percent slopes	
7	Nunn clay loam, 3 to 5 percent slopes	49

Table 7.--General Crop Production Index--Continued

Map symbol	Soil name	Crop index
158	  Nunn-Sampson, rarely flooded, complex, 0 to 3 percent slopes	51
159	Nunn-Sampson, rarely flooded, complex, dry, 0 to 3 percent slopes	49
160	Olnest loamy sand, 1 to 5 percent slopes	
161	Olnest sandy loam, 1 to 3 percent slopes	
162	Olnest sandy loam, 3 to 5 percent slopes	
163 164	Olnest sandy loam, 5 to 12 percent slopes   Olney loamy sand, 1 to 5 percent slopes	
165	Olney sandy loam, 1 to 3 percent slopes	
L66	Olney sandy loam, 3 to 5 percent slopes	
167	Olney sandy loam, 5 to 12 percent slopes	
168	Olney-Midway complex, 3 to 12 percent slopes	28
169	Otero sandy loam, 1 to 5 percent slopes	
170	Oterodry fine sandy loam, 1 to 5 percent slopes	
171	Oterodry fine sandy loam, 5 to 9 percent slopes	
172	Platner loam, 0 to 3 percent slopes	
173	Platner-Ascalon complex, 0 to 3 percent slopes	
174 175	Pleasant loam, 0 to 1 percent slopes, rarely ponded	
175 176	Rago silt loam, dry, 0 to 2 percent slopes, rarely flooded	
177	Razor clay loam, 1 to 5 percent slopes	
178	Razor clay loam, moist, 1 to 5 percent slopes	
179	Sampson loam, 0 to 2 percent slopes, rarely flooded	
180	Sampson loam, dry, 0 to 2 percent slopes, rarely flooded	53
181	Satanta loam, 1 to 3 percent slopes	51
182	Satanta loam, dry, 1 to 3 percent slopes	
183	Seldom sandy loam, 0 to 3 percent slopes, rarely flooded	
184	Shingle-Midway complex, 1 to 9 percent slopes	
185	Shingle-Midway complex, moist, 1 to 9 percent slopes	
186 187	Sundance loamy sand, 1 to 3 percent slopes	
188	Table Mountain loam, 0 to 2 percent slopes, rarely flooded	
189	Truckton sandy loam, 1 to 5 percent slopes	
190	Truckton sandy loam, 5 to 9 percent slopes	
191	Truckton sandy loam, dry, 1 to 5 percent slopes	
192	Truckton sandy loam, dry, 5 to 9 percent slopes	25
193	Valent sand, 3 to 20 percent slopes	
194	Valent-Bijou complex, 1 to 12 percent slopes	
195	Valent-Vona complex, 3 to 25 percent slopes	
196	Valent-Vonid complex, 3 to 25 percent slopes	
197 198	Vona loamy sand, 1 to 9 percent slopes   Vona sandy loam, 1 to 5 percent slopes	
199	Vona sandy loam, 5 to 12 percent slopes	
200	Vona-Karval-Midway, moist, complex, 5 to 25 percent slopes	
201	Vona-Midway, moist, complex, 3 to 12 percent slopes	23
202	Vona-Seldom sandy loams, 3 to 25 percent slopes	26
203	Vonid loamy sand, 1 to 9 percent slopes	
204	Vonid sandy loam, 1 to 5 percent slopes	
205	Vonid sandy loam, 5 to 12 percent slopes	
206	Vonid-Karval-Midway complex, 5 to 25 percent slopes	
207	Vonid-Midway complex, 3 to 12 percent slopes   Vonid-Seldom sandy loams, 3 to 25 percent slopes	
208 209	Wages loam, 2 to 6 percent slopes	
209 210	Wages loam, 2 to 6 percent slopes   Wages loam, 6 to 12 percent slopes	
211	Wages loam, dry, 1 to 5 percent slopes	
212	Wages-Karval complex, 6 to 15 percent slopes	
213	Weld silt loam, 0 to 2 percent slopes	
214	Weld silt loam, dry, 0 to 2 percent slopes	
215	Wiley silt loam, 0 to 3 percent slopes	
216	Wiley silt loam, 3 to 12 percent slopes	
217	Wilid silt loam, 0 to 3 percent slopes	
218	Water	
219	Gravel pits	
220	Access denied	0

Table 8.--Rangeland Productivity and Characteristic Plant Communities

(Only the soils that support rangeland vegetation suitable for grazing are listed. See text for definitions of terms used in this table.)

Map symbol	Ecological site	Total dr	ry-weight pr	oduction	Characteristic vegetation	Maximum rangeland	
and soil name		Favorable     year	Normal year	Unfavorable   year	-   	composition	
		Lb/acre	Lb/acre	Lb/acre		Pct	
101:   Apishapa,				 	   		
rarely ponded-	Plains Swale	1,800	1,200		western wheatgrass	65	
ļ					blue grama	•	
l					buffalograss		
l I					fourwing saltbush   inland saltgrass	•	
l I					American vetch	•	
į		į į			sun sedge	3	
 102:							
Arvada	Salt Flat	1,600	1,050	450	alkali sacaton	45	
I					blue grama	20	
					western wheatgrass	•	
ļ		! !		!	galleta	•	
ļ					fourwing saltbush	5   3	
 					inland saltgrass  	3	
103:   Ascalon	Sandy Plains	2,100	1,700	   850	prairie sandreed	   30	
		-,	_,	•	blue grama		
į		i i			needleandthread	•	
i		į i		İ	sand bluestem	10	
I					switchgrass	10	
I					little bluestem	5	
ļ				1	sideoats grama	•	
					thickspike wheatgrass	5	
104:   Ascalon	Sandy Plaine	2,100	1,700	850	  prairie sandreed	30	
Ascaron	sandy Flains	2,100	1,700		blue grama	•	
ľ					needleandthread	•	
i		i		i	sand bluestem	•	
į		i i		i	switchgrass	•	
i		į i		İ	little bluestem	5	
I				1	sideoats grama	5	
I					thickspike wheatgrass	5	
105:		į į					
Ascalon	Sandy Plains	2,100	1,700		prairie sandreed	•	
ļ				1	blue grama   needleandthread	20 10	
					sand bluestem	10	
ľ				i	switchgrass		
i		i		i	little bluestem	5	
į		į i		į	sideoats grama	5	
İ		İ			thickspike wheatgrass	5	
106:							
Ascalon, dry	Sandy Plains	1,700	1,050	550	blue grama	•	
				1	needleandthread		
ļ				1	prairie sandreed	•	
ļ				1	thickspike wheatgrass		
l I				1	sand dropseed		
l I				i i	sideoats grama	•	
		1		1			

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Mag by whole   Reclorical size   Favorable   Press	V		Total di	ry-weight pr	oduction		Maximum
1071  Ascalon, dry		Ecological site   	:		:	•	
Ascalon, dry   Sandy Plains   1,700   1,050   550		İ	-	Lb/acre		İ	Pct
Ascalon, dry   Sandy Plains   1,700   1,050   550	107:	 	 		 	 	 
		Sandy Plains	1,700	1,050	550	blue grama	40
		!	!		ļ	•	•
Sand bluestem						•-	•
		 	l I		1		•
Ascalon, dry   Sandy Plains   1,700   1,050   550   blue grama   40		<u> </u>	i		i	•	•
Ascalon, dry		į	į		į	sideoats grama	5
Ascalon, dry	108•	 	l I		 	 	İ
		  Sandy Plains	1,700	1,050	550	blue grama	40
Comparison   Com		ĺ	İ	ĺ	İ	needleandthread	15
Sandy Plains   2,100   1,700   850   prairie sandreed   30		!			!	!-	
109:   Ascalon   Sandy Plains   2,100   1,700   850   Prairie sandreed   30		l I					•
109:   Ascalon   Sandy Plains   2,100   1,700   850   Prairie sandreed   20		 	 		 	•	•
Ascalon		İ	į	İ	i	•	•
Ascalon		!	ļ.		ļ.	!	
		  Sandy Plains	   2.100	   1.700	   850	  prairie sandreed	   30
Haxtun   Sandy Plains   2,100   1,700   850   prairie sandreed			-,	_,	i	·-	•
Switchgrass   10   1   11   11   12   10   1,000   1		İ	į	İ	İ	needleandthread	10
Haxtun		[	1	l	I	•	•
Haxtun							•
Haxtun		 	l I	l I	I I	•	•
		l I	i	 	İ	!	
		į	į		į	İ	ĺ
	Havtun	  Sandy Plains	   2 100	   1 700	   850	  nrairie sandreed	   30
Sand bluestem	iidhedii		27100	1,700		•-	•
Switchgrass		İ	į	İ	İ	needleandthread	10
		[	]		I	•	
							•
		 	l I	 	I I	•	•
Ascalon, dry   Sandy Plains   1,700   1,050   550   blue grama   40   needleandthread   15   prairie sandreed   10   thickspike wheatgrass   10   sand bluestem   5   sideoats grama   5   sideoats grama   40   needleandthread   5   sideoats grama   40   needleandthread   15   prairie sandreed   10   thickspike wheatgrass   10   thickspike wheatgrass   10   sand bluestem   5   sideoats grama   5   sand dropseed   5   sand bluestem   5   sand bluestem   5   sand bluestem   5   sand bluestem   5   sand bluestem		i İ	i		i		•
Ascalon, dry   Sandy Plains   1,700   1,050   550   blue grama   40   needleandthread   15   prairie sandreed   10   thickspike wheatgrass   10   sand bluestem   5   sideoats grama   5   sideoats grama   40   needleandthread   5   sideoats grama   40   needleandthread   15   prairie sandreed   10   thickspike wheatgrass   10   thickspike wheatgrass   10   sand bluestem   5   sideoats grama   5   sand dropseed   5   sand bluestem   5   sand bluestem   5   sand bluestem   5   sand bluestem   5   sand bluestem	110					]	
		  Sandy Plains	1,700	l   1,050	   550	  blue grama	l   40
	•	į	İ	ĺ	i		•
		[	1	l	I	prairie sandreed	10
					!		•
		l I	l I	 	I I	1	
		 	i		i	· -	
		Ì	İ		İ	I	ĺ
	Haxtun, dry	Sandy Plains	1,700	1,050	550	•	
		 			I I	•	•
		 	i i	] 	i i	·-	•
		İ	į	İ	i		
111:		[	1	l	I	sand dropseed	•
Bacid         Loamy Plains         1,200         800         200         blue grama				İ		sideoats grama	5
	111:	 				 	 
	Bacid	Loamy Plains	1,200	800	200	blue grama	50
			]		1		•
		 	1	 	1	· -	•
		 		] 			•
i i i i i		į	i		i	•	
		l	1		1	I	l

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	ry-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name	 	Favorable     year	Normal year	Unfavorable   year	 	composition
	 	Lb/acre	Lb/acre	Lb/acre		Pct
112: Bankard, occasionally	   			     		
flooded	Sandy Bottom Land	2,500	1,800	1,200	switchgrass   prairie sandreed	25 20
	 			! 	sand bluestem	15
	İ	i i		i	yellow Indiangrass	10
	!	!!!			inland saltgrass	
	  -				little bluestem   needleandthread	
	 			1	sideoats grama	
	' 	i i		i	western wheatgrass	2
	 			[ 	sand sagebrush	1
Glenberg, occasionally	   	į		į		
_	  Sandy Bottom Land	2,300	1,700	900	  switchgrass	25
	İ	i i		i	sand bluestem	15
	!	! !		Į.	prairie sandreed	
		!!!		•	yellow Indiangrass   blue grama	
	 				Canada wildrye	
	 	i i			little bluestem	
	ĺ	į į		ĺ	needleandthread	
				!	sedge	
	 			I I	sideoats grama  western wheatgrass	
	 	;		i I	tall dropseed	3
113:	  -	į į		į		
Bijou	  Sandy Plains	1,600	1,000	500	  blue grama	45
	i İ	i i		İ	needleandthread	10
				ļ .	sideoats grama	
	 			I I	little bluestem   prairie sandreed	
	! 	i		i	sand bluestem	
	İ	i i		İ	sand dropseed	5
	<u> </u>	!!!		!	sun sedge	
	 			 	sand sagebrush  	3
114: Bijou, moist	  Sandy Plains	2,000	1,600	   800	  blue grama	25
	i İ	j j		İ	prairie sandreed	25
	<u> </u>	!!!		!	little bluestem	10
	  -			1	sideoats grama   needleandthread	
	 			! 	sand bluestem	
	İ	i i		i	switchgrass	
	ļ	]		Į.	sand dropseed	
	 			 	sand sagebrush  	3
115: Bijou, moist	  Sandy Plains	2,000	1,600	   800	  blue grama	25
-	İ	i i		i	prairie sandreed	25
				[	little bluestem	
	 			1	sideoats grama   needleandthread	
	 			! 	sand bluestem	
	i İ	i i		i	switchgrass	
	I	ı i		I	sand dropseed	3
	!	: '		:	sand sagebrush	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	y-weight pro	oduction	Characteristic vegetation	Maximum rangeland
and soil name		Favorable	Normal	Unfavorable	:	composition
	L	year	year	year		
		Lb/acre	Lb/acre	Lb/acre		Pct
				!	!	
116:			1 000	1 000		20
Blakeland	Deep Sands	2,500	1,800	•	sand bluestem   prairie sandreed	30 20
	 	 		•	prairie sandreed   switchgrass	15
	 	! ! ! !		•	yellow Indiangrass	10
	 	I I		•	needleandthread	
		i i		•	blue grama	5
	İ	i i		İ	little bluestem	5
				l	sand dropseed	3
					sand sagebrush	3
				l		
117:				!	!	
Bresser	Sandy Plains	1,700	1,050	550	blue grama	40
	 			I I	needleandthread	15
	 	ı İ		•	prairie sandreed   thickspike wheatgrass	10 10
	1 	,   			sand bluestem	
	 	I I		•	sand dropseed	5
		i i		i	sideoats grama	5
		i i		İ	i i	
118:		i i		ĺ	İ	
Campo	Loamy Plains	1,200	800	200	blue grama	50
					western wheatgrass	20
				•	galleta	
	•			•	buffalograss	
	İ			 	fourwing saltbush   needleandthread	5 5
	 	 		l I	needleandthread	5
119:	 			I I	! !	
	Limestone Breaks	   1,250	850	l 550	  little bluestem	20
-		i i		İ	sideoats grama	20
		i i		İ	blue grama	10
				l	Indian ricegrass	10
					hairy grama	5
				•	needleandthread	5
		!!!		•	perennial forbs	
				•	shrubs	
	l I	 		l I	threadleaf sedge   western wheatgrass	5 5
	 	 		l I	western wheatgrass	3
Rock outcrop.		i i		i	i i	
		ı i		I	ı i	
120:		l l		l	I I	
Colby	Loamy Plains	1,600	1,000		blue grama	35
				•	western wheatgrass	30
	 	 			green needlegrass	
	 	ı İ		•	buffalograss   needleandthread	
	 	ı   		•	needleandthread   fourwing saltbush	
	 	;		İ		,
121:		į į		İ	į i	
Colby	Loamy Slopes	1,200	800	400	blue grama	35
		ı İ		I	western wheatgrass	25
		l l		•	green needlegrass	
		 :		•	sideoats grama	
		ļ ļ		•	buffalograss	
				•	little bluestem	
	 	 		l I	sand dropseed	3
	I	ı l		I	1	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	Ecological site	Total dr	ry-weight pro	oduction	   Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable		composition
		Lb/acre	Lb/acre	Lb/acre	I	Pct
		mb/acre	ID/ACTE	LD/acre	 	PCC
122:		i		i I		
Colby	Loamy Plains	1,600	1,000	500	blue grama	35
-	_	i i	-	İ	western wheatgrass	30
		j		İ	green needlegrass	15
				l	buffalograss	5
				l	needleandthread	5
				l	fourwing saltbush	3
				l		
Weld	Loamy Plains	1,600	1,000	500	blue grama	35
					western wheatgrass	30
				•	green needlegrass	15
		 		•	buffalograss   fourwing saltbush	5 5
		 		l I	needleandthread	5
		 		l I		3
123:		i		i I		
	Sandy Salt Flat	2,200	1,400	700	  alkali sacaton	35
	=			•	blue grama	20
		i İ		İ	switchgrass	15
				l	sand bluestem	10
				l	western wheatgrass	10
				l	inland saltgrass	5
				l	sand sagebrush	3
				!		
124:			1 000			25
Fort Collins	Loamy Plains	1,600	1,000	500	blue grama	35
				l I	western wheatgrass   green needlegrass	30 15
		 		l I	buffalograss	5
		 		•	fourwing saltbush	5
		 		i I	needleandthread	5
				İ		_
125:		j		İ	i i	
Fort Collins	Loamy Plains	1,600	1,000	500	blue grama	35
				l	western wheatgrass	30
					green needlegrass	15
				•	buffalograss	5
					fourwing saltbush	5
				<u> </u>	needleandthread	5
100						
126:	I come Dicina	1 600	1 000	 	  blue grama	35
Fort Collins	noamy riains	1,600   	1,000	l 500	western wheatgrass	35
		 		i I	green needlegrass	15
					buffalograss	5
				•	fourwing saltbush	5
		i İ		•	needleandthread	5
		l i		l	l i	
Karval	Gravel Breaks	1,450	850	•	blue grama	20
				l	little bluestem	15
				•	sideoats grama	15
		  -		!	prairie sandreed	
				!	Indian ricegrass	5
				l I	needleandthread	5
		 		l I	sand dropseed	3
127:		 		I I	 	
Fort Collins	Loamy Plains	   1,600	1,000	I 500	  blue grama	35
TOLU COLLINS	rains	±,000	1,000	, 500 I	western wheatgrass	30
				İ	green needlegrass	15
				•	buffalograss	5
				•	fourwing saltbush	5
		i İ		•	needleandthread	5
	İ	l i			l i	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol   E	Ecological site	Total dr	y-weight pr	oduction	   Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable   year		composition
ĺ		Lb/acre	Lb/acre	Lb/acre		Pct
		!!!		Į.		
127:	Dlaima	1 600	1,000	====	  blue grama	35
Platner Loan	y Plains	1,600	1,000	:	western wheatgrass	35
<u> </u>		; ;		•	green needlegrass	15
		;		•	buffalograss	5
i		i		•	fourwing saltbush	5
i		i i		i	needleandthread	5
į		i i		İ	İ	
128:		1 1		1		
Fort Collins Loan	ny Plains	1,600	1,000	500	blue grama	35
				•	western wheatgrass	30
		!!!		•	green needlegrass	15
!		!!!		•	buffalograss	5
				1	fourwing saltbush	5
		!!!			needleandthread	5
Razor, moist Clay	row Blains	1,500	1,000	I 500	  western wheatgrass	35
Razor, moist Clay	ey Plains	1 1,500	1,000	•	blue grama	25
				•	fourwing saltbush	10
i i		;		•	green needlegrass	10
ì		iii		•	alkali sacaton	5
i		i i		•	winterfat	5
į		i i		İ	i i	
129:		į į		İ	j i	
Fort Loan	ny Plains	1,200	800	200	blue grama	50
		1 1			western wheatgrass	15
					galleta	10
					buffalograss	5
					fourwing saltbush	5
Į.				•	green needlegrass	5
		!!!		!	sand dropseed	5
130:		! !		1	 	
130:   Fort Loan	w Dlaine	1,200	800	l 200	  blue grama	50
rorc  Boan	ly Flains	1 1,200	000	•	western wheatgrass	15
i i		; ;			galleta	10
i		i i		•	buffalograss	5
i		i i		İ	fourwing saltbush	5
į		i i		į	green needlegrass	5
		1 1			sand dropseed	5
		1 1		1		
131:				1		
Fort Loan	ny Plains	1,200	800	•	blue grama	50
		!!!			western wheatgrass	15
!		!!!		•	galleta	10
ļ		!!!		•	buffalograss	5
ļ		!!!		•	fourwing saltbush	
		! !			green needlegrass   sand dropseed	
I I				I I	sand dropseed	5
Karval Grav	vel Breaks	1,400	800	400	  sideoats grama	35
		1,100	550	•	blue grama	
		i i		•	little bluestem	
		i i			galleta	
i		į i		•	needleandthread	
i		į i		•	sand dropseed	
		;		i	· = !	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	y-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name	   	Favorable     year	Normal year	Unfavorable   year		composition
	Ī	Lb/acre	Lb/acre	Lb/acre		Pct
	!	!!!		ļ.	!	
132: Fort	Loamy Plains	1,200	800	200	  blue grama	50
FOIT	LOAMY PIAINS	1,200	800	] 200 ]	western wheatgrass	15
	 			i i	galleta	10
	! 	i i			buffalograss	5
	İ	i i		İ	fourwing saltbush	5
		1			green needlegrass	5
	ļ	]		]	sand dropseed	5
_			1 000			45
Razor	Alkaline Plains	1,500	1,200		alkali sacaton	45 20
	 				galleta   blue grama	20 15
	 				western wheatgrass	10
	! 	i i		i	fourwing saltbush	5
	İ	i i		İ	i i	
133:	İ	i i		į	į i	
Haversid,		1 1		1		
rarely flooded	Saline Overflow	2,300	1,500	700	alkali sacaton	35
					western wheatgrass	25
		!!!		•	blue grama	10
	 				fourwing saltbush	10 7
	 				vine mesquite   galleta	5
	 				inland saltgrass	3
	 	i i		İ		
134:	İ	i i		į	į i	
Haverson,		1		1	l I	
rarely flooded	Overflow	2,600	1,900		western wheatgrass	35
					green needlegrass	20
		!!!		•	switchgrass	15
		!!!		•	blue grama	10 7
	 			•	fourwing saltbush   big bluestem	5
	 			i i		3
135:	! 	i i		i	i i	
Haxtun	Sandy Plains	2,100	1,700	850	prairie sandreed	30
	ĺ	i i		İ	blue grama	20
				•	needleandthread	10
	<u> </u>	!!!		!	sand bluestem	10
		!!!		!	switchgrass	10
	 				little bluestem   sideoats grama	5 5
	 				thickspike wheatgrass	5
	! 	iii		i		3
136:		į į		İ	į	
Haxtun, dry	Sandy Plains	1,700	1,050	550	blue grama	40
					needleandthread	15
					prairie sandreed	10
					thickspike wheatgrass	10
		!!!			sand bluestem	5
	 				sand dropseed	5 5
	 			I I	sideoats grama	5
137:	! 				 	
Haxtun, dry	Sandy Plains	1,700	1,050	550	  blue grama	40
		-,	-,		needleandthread	15
	İ	į i		i	prairie sandreed	10
		i i			thickspike wheatgrass	10
	I	ı İ		1	sand bluestem	5
		1 1			sand dropseed	5
	ļ	<u> </u>		]	sideoats grama	5
				1		

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Mag			Total dr	ry-weight pr	oduction		Maximum
Table   Tabl	Map symbol and soil name	Ecological site   	:			Characteristic vegetation   	rangeland   composition 
Sandy Plains   1,550   950   450   blue grama	-			<del>-</del>			Pct
Sandy Plains   1,550   950   450   blue grama		İ	i i	İ	İ	İ	ĺ
	Olney	Sandy Plains	1,550	950 	•		•
		 				. –	•
			i i			•	•
Sum   Sandy Plains   2,100   1,700   850   Prairie sandreed   3   30   30   30   30   30   30   30		İ	į i	İ	İ	sand sagebrush	5
Naturn					•		
138:							
Haxtun		 		l I	I I	prairie sandreed	3 
Haxtun	138:	 			i i	I I	i I
		Sandy Plains	2,100	1,700	850	prairie sandreed	30
Sand bluestem   10   10   11ttle bluestem   5   5   5   5   5   5   5   5   5		İ	į i	ĺ	İ	blue grama	20
Sandy Plains   1,900   1,500   750   blug grama			1	l	1	needleandthread	10
					•	•	•
					•		•
Olnest		 		 	:	!	!
Olnest		 		] 	l I		
		İ	i i	İ	i		İ
	Olnest	Sandy Plains	1,900	1,500	750	blue grama	25
Sidecats grama   10   1   11   11   11   11   11   11				l	•	·-	•
					:	:	:
					•		•
		 			1		:
		 	i	 	•	•	
Note		İ	į i	İ	:		:
						sand sagebrush	] 3
		!	!		!	!	!
		 	1 600	1 000		12.1	
	Keitn	Loamy Plains	1,600	1,000	:		
		 		] 	:	·	:
		İ	į i	İ	•		•
Meith		ĺ	İ	ĺ	İ	fourwing saltbush	5
Neith		!			1	needleandthread	5
Neith	140.						
		  Loamy Plains	1 1,600	l 1,000	I 500	  blue grama	l 35
			-,	_,	•		•
		İ	į i	İ	İ	green needlegrass	15
141:							
141:       Kim Loamy Plains       1,200       800       200       blue grama							
Kim		 			1	needleandthread	5 
Kim	141:	1 		! 		İ	İ
		Loamy Plains	1,200	800	200	blue grama	50
		İ	i i		İ	western wheatgrass	15
		!	<u> </u>		•	· -	•
					•		
		 	1	] 	•		
142:  Kim   Loamy Plains   1,200   800   200   blue grama   50		I 		[ [	•		•
Kim		 	i	! 			, J
	142:	i	i i	İ	i	i	İ
	Kim	Loamy Plains	1,200	800	200	blue grama	50
		!	<u> </u>				
					:	! -	:
green needlegrass 5		 	1	] 	•	•	
		1 		 	•	•	•
		İ	į i		i		
		l	1			I	l

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	y-weight pr	oduction	   Characteristic vegetation	Maximum rangeland
and soil name	 	Favorable	Normal year	Unfavorable   year		composition
		Lb/acre	Lb/acre	Lb/acre	]	Pct
	!	[ [		ļ.	]	
143: Kimst	Loamyr Blaing	1,600	1,000	500	  blue grama	35
KIMSC	LOAMY PIAINS	1 1,600	1,000	1 500	western wheatgrass	
	 	; ;		l I	green needlegrass	
	 	i i		i	buffalograss	
	į	į į		į	fourwing saltbush	5
		1 1			needleandthread	5
144:	 	1 600	1 000			3.5
Kimst	Loamy Plains	1,600	1,000	1 500	blue grama   western wheatgrass	35 30
	 	;		1	green needlegrass	
		i		i	buffalograss	
	į	i i		İ	fourwing saltbush	5
		1 1			needleandthread	5
		1 1				J
145:	!	!!!		!	!	
Las Animas,		!!!!		ļ		  -
occasionally flooded	  Salt Meadow	3,500	2,600	1 1 400	  alkali sacaton	40
1100ded	Baic Meadow	3,300	2,000	1,400	switchgrass	15
	 	i i		i	western wheatgrass	15
	į	i i		İ	alkali bluegrass	10
	ĺ	į į		Ì	Baltic rush	5
		1 1			fourwing saltbush	5
	!	!!!		!	inland saltgrass	5
		!!!			Nebraska sedge	5
146:	l I			I I	 	i I
Limon, rarely	 	;		1	! !	, 
flooded	  Salt Flat	1,500	1,000	400	alkali sacaton	40
	İ	i i		į	blue grama	25
	ĺ	į į		İ	fourwing saltbush	10
		1 1			western wheatgrass	10
		!!!			galleta	5
		! !			inland saltgrass	5
147:	l I			I I	 	i İ
Limon, moist,	 	; ;		l I		
rarely flooded	Salt Flat	1,800	1,100	500	alkali sacaton	35
	ĺ	į į		Ì	blue grama	20
		1 1			western wheatgrass	20
	!	!!!		!	buffalograss	5
		!!!			fourwing saltbush	5 5
	 			I I	inland saltgrass	, 5 i
148:	! 	; ;		İ	 	
	Alkaline Plains	1,500	1,200	500	alkali sacaton	45
	I	ı i		1	galleta	20
		1 1			blue grama	
		!!!			western wheatgrass	
	 			1	fourwing saltbush	5
149:	 	1		I I	 	i I
Manzanst,	1 	;			, 	
rarely flooded	Overflow	2,600	1,900	1,100	  western wheatgrass	35
	i		•	i	green needlegrass	
		ı i		1	switchgrass	15
	1	1 1		•	blue grama	
	!	ļ I			fourwing saltbush	
				1	big bluestem	5
	I	1 1		1	1	1

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol   Ecological site	Total dr	ry-weight pr	oduction	 _  Characteristic vegetation	Maximum rangeland	
and soil name		Favorable	Normal   year	Unfavorable   year	,	composition
		Lb/acre	Lb/acre	Lb/acre	l	Pct
		227, 2020		22, 4010	i	100
150:		i i	İ	i	į i	
Manzanst	Alkaline Plains	1,500	1,200	500	alkali sacaton	40
		1 1			galleta	20
		!!!		•	blue grama	
		!!!		•	western wheatgrass	
	<u> </u>		] ]	I I	buffalograss  	5
151:		i	 	İ	 	
Midway	Shaly Plains	1,000	550	300	alkali sacaton	40
_		į į	İ	į	galleta	25
İ		į į		İ	blue grama	20
		1 1			western wheatgrass	10
1					fourwing saltbush	5
		!!!		!	winterfat	5
		!!!				
L52: Midway moist	  Shalw Plaine	1,200	l I 700	I I 400	  alkali sacaton	25
Midway, moist Shaly Plains	1,200	, , , , , , , , , , , , , , , , , , ,	:	aikaii sacaton   western wheatgrass		
		; ;	] 	•	blue grama	
		i i		:	sideoats grama	
		i i	İ	•	green needlegrass	
İ		į į		İ	fourwing saltbush	5
İ	1 1			winterfat	5	
				1		
153:						
Midway	Shaly Plains	1,000	550	•	alkali sacaton	
			]		galleta   blue grama	
			 	•	western wheatgrass	
		; ;	] 	•	fourwing saltbush	
		i i		•	winterfat	5
		1			l I	
Razor	Alkaline Plains	1,500	1,200	500	alkali sacaton	45
				•	galleta	
		!!!		•	blue grama	
			]	•	western wheatgrass   fourwing saltbush	10 5
				I I	containg saithusn	5
154:		i	 	İ	 	
Midway, moist	Shaly Plains	1,200	700	400	alkali sacaton	25
İ		į į	ĺ	İ	western wheatgrass	25
		1			blue grama	15
		1 1			sideoats grama	15
				•	green needlegrass	
		!!!		•	fourwing saltbush	
		!!!			winterfat	5
Razor, moist	  Clavey Plains	1,500	1,000	I 500	  western wheatgrass	35
Razor, moist	crakeh traims	1,500	1,000	•	blue grama	
		;		•	fourwing saltbush	
		į i		•	green needlegrass	
		į i		•	alkali sacaton	
j		ı i		I	winterfat	5
ĺ		1 1		I	I	
L55:				Į.		
Midway	Shaly Plains	1,000	550	•	alkali sacaton	40
					galleta	
	l I		] 	•	blue grama	
	l I		 		western wheatgrass   fourwing saltbush	
			 		rourwing saitbusn   winterfat	
			! 			, ,
		i	i İ	i		
Rock outcrop.						

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	ry-weight pr	oduction	   Characteristic vegetation	Maximum   rangeland
and soil name		Favorable	Normal	Unfavorable	•	composition
		year	year	year		
		Lb/acre	Lb/acre	Lb/acre		Pct
156.	I I				1	
156: Midway, moist	  Chalm Blaing	1,200	700	1 400	  alkali sacaton	l l 25
midway, moist	Shary Plains	1,200	700	1 400	western wheatgrass	
	}				blue grama	
	i İ	;			sideoats grama	•
	i	i		i	green needlegrass	•
	i	i i		i	fourwing saltbush	•
	i	i i		i	winterfat	, - I 5
	ì	i i		i	i	İ
Rock outcrop, moist.				; [ ]	 	   
157:	}				 	l I
Nunn	  Loamy Plains	1,600	1,000	I 500	blue grama	l   35
Numi	Ioamy Flains	1 1,000	1,000	1 300	western wheatgrass	:
	1	; ;			green needlegrass	
	i	;			buffalograss	•
	1	; ;			fourwing saltbush	•
	i				needleandthread	•
	i					, J
158:	i	;			I 	] 
Nunn	  Loamy Plains	1,600	1,000	l 500	blue grama	l 35
*******		2,000		1	western wheatgrass	•
	i	;			green needlegrass	•
	i	i i		i	buffalograss	•
	i	i i		i	fourwing saltbush	•
	i	i i		i	needleandthread	•
	i	i i		i		ĺ
Sampson, rarely	İ	i i		İ	İ	İ
flooded	Overflow	2,600	1,900	1,100	western wheatgrass	35
	İ	i i		İ	green needlegrass	20
	İ	į į		İ	switchgrass	15
	İ	į į		Ì	blue grama	10
	1				fourwing saltbush	7
	I	1 1			big bluestem	5
	I	1 1		1		1
159:	I					1
Nunn, dry	Loamy Plains	1,200	800	200	blue grama	50
	I				western wheatgrass	
	I				galleta	•
	1				buffalograss	
	Į.	!!!			fourwing saltbush	
	Į.	!!!			winterfat	3
	Į.	!!!				
Sampson, dry,				I		
rarely flooded	Saline Overflow	2,300	1,500	700	alkali sacaton	:
				1	western wheatgrass	•
					blue grama	•
	!	!!!		!	fourwing saltbush	•
	I .			!	vine mesquite	•
	1	!!!		!	galleta	•
	  -				inland saltgrass	3
160:	I I	1		I I	I I	] 
Olnest	  Candy Blains	1 1 000	1 500	   75^	hluo grama	l l 25
OTHESC	leand Ligins	1,900	1,500	1 /50	blue grama	
	I I	1		I I	prairie sandreed	•
	I I			I I	sideoats grama	
	I I			I I	little bluestem	•
	I I			I I	sand bluestem	•
	I I			i i	sand dropseed	•
	I I			i i	thickspike wheatgrass	•
	i I	;		i	sand sagebrush	•
	i I			i		, 3 I
	1	1 1		1	1	J

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol   Eco	ological site	Total dr	ry-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name	İ	Favorable	Normal year	Unfavorable   year		composition
	I	Lb/acre	Lb/acre	Lb/acre		Pct
					]	
161:	Plaine	1,900	1,500	   750	  blue grama	l l 25
omesc bandy		1,500	1,500		prairie sandreed	
i	į	i		•	needleandthread	•
Ì	j	İ			sideoats grama	•
!	ļ			•	little bluestem	•
	ļ	ļ		•	sand bluestem	•
ļ i	I			•	sand dropseed	•
	l I			I I	sand sagebrush	•
i	i	i		i		
162:	į	i		i	İ	İ
Olnest Sandy	Plains	1,900	1,500	750	blue grama	25
!	ļ			•	prairie sandreed	•
	ļ			•	needleandthread	•
ļ i	I			•	sideoats grama	•
<u> </u>	l I			•	sand bluestem	•
Ì	i	i		•	sand dropseed	•
i	į	i		•	thickspike wheatgrass	•
į	j	i		İ	sand sagebrush	3
	I	I		1	I	
163:				!	!	
Olnest Sandy	Plains	1,900	1,500	•	blue grama	•
	I			•	prairie sandreed   needleandthread	•
	l I			•	sideoats grama	•
i	i	i		•	little bluestem	•
į	į	i		į	sand bluestem	5
j	j	Ì		İ	sand dropseed	5
	I	I			thickspike wheatgrass	5
!	ļ			1	sand sagebrush	3
164.	I	!				
164:	Plaine	1,550	950	I 450	  blue grama	l l 50
orney   bundy		1,550		1	sand dropseed	•
i	i	i		i	little bluestem	•
į	j	i		İ	needleandthread	5
	I	I			sand sagebrush	5
Į.	ļ	ļ		1	sideoats grama	•
	ļ				sun sedge	•
l I	l I	ļ		I I	prairie sandreed	] 3 I
165:	i I	i		İ	! 	! 
Olney Sandy	Plains	1,550	950	450	blue grama	50
į	j	i		İ	sand dropseed	10
	I	I			little bluestem	
Į.	ļ	ļ		•	needleandthread	•
ļ	ļ			•	sand sagebrush	•
ļ	I			1	sideoats grama	•
	l I			I I	sun sedge   prairie sandreed	l 3
	l I	ļ		i		İ
166:	i	i		i	i	i İ
Olney Sandy	Plains	1,550	950	450	blue grama	50
	I	I			sand dropseed	•
!	ļ	!			little bluestem	
	ļ	!		•	needleandthread	•
	ļ	!		•	sand sagebrush	•
	l I			•	sideoats grama sun sedge	•
į	!		•	•	•	
I				1	prairie sandreed	l 3

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	Ecological site	Total dr	y-weight pr	oduction	   Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable   year	 	composition
i		Lb/acre	Lb/acre	Lb/acre		Pct
į		į į		İ	į į	
167:				I		
Olney	Sandy Plains	1,550	950	450	blue grama	50
I				I	sand dropseed	
ļ					little bluestem	7
		!!!			needleandthread	
!		!!!			sand sagebrush	
ļ		!!!			sideoats grama   sun sedge	
I					sun sedge   prairie sandreed	5 3
				I I	prairie sandreed	3
168:				1	 	
Olney	Sandy Plains	1,550	950	l 450	  blue grama	50
	24147 1 14115	2,550	200		sand dropseed	
i		i i			little bluestem	
i		i i		i	needleandthread	5
į		į i		į	sand sagebrush	5
į		į į		İ	sideoats grama	5
i		į į		ĺ	sun sedge	5
1				1	prairie sandreed	3
I						
Midway	Shaly Plains	1,000	550	300	alkali sacaton	40
I				1	galleta	25
				blue grama		
!		!!!			western wheatgrass	
ļ		!!!			fourwing saltbush	
!		!!!			winterfat	5
1.50		!!!				
169:	gd p1i	1 000	1 500			25
Otero	sandy Plains	1,900	1,500		blue grama   prairie sandreed	
I I					prairie sandreed   needleandthread	
;					sideoats grama	
i i					little bluestem	
i		i i			sand bluestem	
i		i i			sand dropseed	
i		i i			thickspike wheatgrass	5
į		į i		į	sand sagebrush	3
İ		į į		ĺ	İ	
170:		1		I		
Oterodry	Sandy Plains	1,550	950	450	blue grama	50
I		ļ I			sand dropseed	
1					little bluestem	7
!		!!!		!	needleandthread	5
!		!!!		!	sand sagebrush	5
!		!!!		•	sideoats grama	5
!		!!!			sun sedge	
ļ				I I	prairie sandreed	3
171:				I I	 	
Oterodry	Sandy Plains	1,550	950	1 450	  blue grama	50
		1,555	220	•	sand dropseed	
i I		;			little bluestem	
i		į i		•	needleandthread	
i		į i		•	sand sagebrush	
i		į i			sideoats grama	
į		į i			sun sedge	
į		į i		I	prairie sandreed	3
		. :		ı		

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	Ecological site	Total dr	y-weight pr	oduction	 _  Characteristic vegetation	Maximum rangeland
and soil name	Ecological Bice	Favorable     year	Normal year	Unfavorable   year		composition
		Lb/acre	Lb/acre	Lb/acre	l i	Pct
į		i i		İ	i i	
172:		1 1		l	1	
Platner	Loamy Plains	1,600	1,000	500	blue grama	35
ļ		!!!!			western wheatgrass	30
I I				•	green needlegrass   buffalograss	15 5
· · · · · · · · · · · · · · · · · · ·				•	fourwing saltbush	5
i		i i			needleandthread	5
į		i i		İ	i i	
173:		1 1		ĺ	I I	
Platner	Loamy Plains	1,600	1,000	500	blue grama	35
ļ				<u> </u>	western wheatgrass	30
ļ		!!!!		•	green needlegrass	15
!				•	buffalograss   fourwing saltbush	5 5
I I				•	needleandthread	5
i				I I		3
Ascalon	Sandy Plains	2,100	1,700	,   850	  prairie sandreed	30
i	-			•	blue grama	
į		į į		İ	needleandthread	10
1		1 1		l	sand bluestem	10
I				l	switchgrass	10
Ţ				•	little bluestem	
!		!!!		•	sideoats grama	5
!		!!!!			thickspike wheatgrass	5
174:				l i		
Pleasant,				I I	 	
rarely ponded-	Plains Swale	1,800	1,200	l 900	  western wheatgrass	65
		-,	_,	•	blue grama	10
į		i i		•	buffalograss	5
İ		į į		ĺ	inland saltgrass	5
I				l	sun sedge	5
Į.		!!!		!	! !	
175:		!!!		<u> </u>	!	
Rago, rarely			1 000	1100		25
flooded	Overiiow	2,600	1,900	•	western wheatgrass   green needlegrass	35 20
· · · · · · · · · · · · · · · · · · ·				•	switchgrass	
i		iii		•	blue grama	10
i		i i		•	fourwing saltbush	7
į		į į		İ	big bluestem	5
I				l	I I	
176:		!!!		!	! !	
Rago, dry,	g-14 0 53		4 500			2-
rarely flooded	Saline Overflow	2,300	1,500	•	alkali sacaton	35 25
I I		1 I		•	western wheatgrass   blue grama	25 10
				•	fourwing saltbush	10
i		; ;		•	vine mesquite	
i		į i		•	galleta	5
į		i i		•	inland saltgrass	3
İ		I i			I i	
177:		<u> </u>		!	<u> </u>	
Razor	Alkaline Plains	1,500	1,200	•	alkali sacaton	45
				•	galleta   blue grama	20
]				1		15
				•	, -	
   				İ	western wheatgrass   fourwing saltbush	10

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	y-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name	 	Favorable     year	Normal year	Unfavorable   year		composition
	İ	Lb/acre	Lb/acre	Lb/acre		Pct
170.						
178: Razor, moist	  Clayey Plains	1,500	1,000	500	  western wheatgrass	35
		i i	,	İ	blue grama	25
	ĺ	i i		İ	fourwing saltbush	10
	[	] ]		1	green needlegrass	10
		!!!!			alkali sacaton	5
	 	1 1		I I	winterfat	5
179:	! 	i i		i		
Sampson, rarely	İ	j j		į	į i	
flooded	Overflow	2,600	1,900	1,100	western wheatgrass	35
	<u> </u>	!!!		!	green needlegrass	20
		!!!			switchgrass	15
	 			I I	blue grama    fourwing saltbush	10 7
	 	i		İ	big bluestem	5
	İ	i i		į	i	
180:		1 1			I	
Sampson, dry,						
rarely flooded	Saline Overflow	2,300	1,500	700	alkali sacaton	35 25
	 			I I	western wheatgrass    blue grama	10
	 	i			fourwing saltbush	
	İ	i i		į	vine mesquite	7
		1 1		1	galleta	5
		!!!			inland saltgrass	3
181:	 			l I	 	
Satanta	  Loamy Plains	1,600	1,000	l 500	blue grama	35
		i i	•	İ	western wheatgrass	30
	ĺ	i i		İ	green needlegrass	15
	[	]		]	buffalograss	5
					fourwing saltbush	5
	 			l I	needleandthread	5
182:	! 	i i		i	1	
Satanta, dry	Loamy Plains	1,200	800	200	blue grama	50
		1 1		1	western wheatgrass	15
		!!!			galleta	
		!!!			buffalograss	5 5
	 			I I	fourwing saltbush    green needlegrass	5
	! 	i i		i	sand dropseed	5
	i İ	i i		İ	į i	
183:	<u> </u>	!!!		!	!	
Seldom, rarely flooded	 		2 500	1 500	1-11-14	40
1100ded	Salt MeadOW	3,300	2,500	1,500	alkali sacaton	20
	 	i		İ	switchgrass	15
	İ	i i		į	Baltic rush	5
		1 1			inland saltgrass	5
	<u> </u>	!!!		!	Nebraska sedge	5
					prairie cordgrass	5
184:	 	1 I		 	I I	
Shingle	  Shaly Plains	1,000	550	300	alkali sacaton	40
<b>3</b> -	. <u>-</u>	j , , , , , ,		i	galleta	25
	I	ı i		I	blue grama	20
	l	I i		I	western wheatgrass	10
	<u> </u>	! !		!	fourwing saltbush	5
	  -			1	winterfat	5
	I	1 1		I	1	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dr	ry-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name	Ecological site	Favorable     year	Normal year	Unfavorable   year		composition
		Lb/acre	Lb/acre	Lb/acre		Pct
184:	İ			 	 	İ
Midway	  Shaly Plains	1,000	550	300	alkali sacaton	40
		į į		İ	galleta	25
				•	blue grama	•
	İ			•	western wheatgrass   fourwing saltbush	•
	 	;		İ	winterfat	
		i i		i	İ	İ
185:		!!!		!		
Shingle, moist-	Shaly Plains	1,200	700	:	alkali sacaton	
	 				western wheatgrass   blue grama	'
		i i		1	sideoats grama	
		į į		İ	green needlegrass	10
		!!!		•	fourwing saltbush	•
					winterfat	5
Midway, moist	  Shalv Plains	1,200	700	l 400	  alkali sacaton	l 25
,		-,		:	western wheatgrass	
		į į		İ	blue grama	15
		!!!		•	sideoats grama	•
	İ			:	green needlegrass   fourwing saltbush	
	 			•	winterfat	•
		i i		İ		
186:		1 1		I	I	l
Sundance	Sandy Plains	2,000	1,600	•	blue grama	•
	 				prairie sandreed   little bluestem	•
	 	i			sideoats grama	
		i i		•	needleandthread	•
		1 1		•	sand bluestem	•
					switchgrass	
	 			I I	sand dropseed	
	! 	i		i		,
187:	İ	j j		İ	İ	İ
Table Mountain,	•	!!!		!	!	
rarely flooded	Overflow	2,600	1,900	:	western wheatgrass	
	 			:	green needlegrass   switchgrass	
		i i			blue grama	•
		į į		İ	fourwing saltbush	7
					big bluestem	5
188:	 			I I	] 	 
	  Sandstone Breaks	1,800	900	550	  blue grama	30
	İ	j i		İ	sideoats grama	15
	[			•	hairy grama	•
	 	!!!			little bluestem	•
	 				needleandthread   threadleaf sedge	
		i i		i		
Rock outcrop.		1 1		1	I	
190-	  -					
189: Truckton	  Sandy Plaine	2,100	1,700	   850	  prairie sandreed	   30
		2,100	1,,00	•	blue grama	•
	İ	i i		•	needleandthread	•
	[	į i		•	sand bluestem	•
				•	switchgrass	•
	  -	!!!		•	little bluestem   sideoats grama	•
				•	thickspike wheatgrass	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	Ecological site	Total dr	y-weight pr	oduction	   Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable   year	•	composition
		Lb/acre	Lb/acre	Lb/acre	1	Pct
İ		i i		Ì	İ	
190:						
Truckton	Sandy Plains	2,100	1,700	850	prairie sandreed	30
		!!!		!	blue grama	
				1	needleandthread    sand bluestem	10 10
				1	switchgrass	
		i i		i	little bluestem	
		i i		i	sideoats grama	5
		i i		i	thickspike wheatgrass	5
		i i		İ	į	
191:		i i		Ì	İ	
Truckton, dry	Sandy Plains	1,700	1,050	550	blue grama	40
					needleandthread	
				1	prairie sandreed	10
					thickspike wheatgrass	
				!	sand bluestem	
		!!!		!	sand dropseed	
		!!!		!	sideoats grama	5
100		!!!		!		
192:	Conder Dining	1 700	1 050	==0	  blue grama	   40
Truckton, dry	Sandy Plains	1,700	1,050	] 550	needleandthread	
				1	prairie sandreed	
		; ;			thickspike wheatgrass	
		i i		i	sand bluestem	
	i i		i	sand dropseed	5	
		i i		i	sideoats grama	5
		i i		İ	į	
193:		1			<b>[</b>	
Valent	Deep Sands	1,950	1,450	850	sand bluestem	20
				1	prairie sandreed	
				1	blue grama	
		!!!		!	needleandthread	
		!!!		!	switchgrass	
		!!!		!	sand sagebrush	
					Indian ricegrass   little bluestem	
				1	sideoats grama	5   5
				1	yellow Indiangrass	
		i i		i		,
194:		i i		i	i i	
Valent	Deep Sands	1,950	1,450	850	sand bluestem	20
İ		ı i		I	prairie sandreed	15
		1 1			blue grama	10
		1 1		1	needleandthread	
		ļ I		!	switchgrass	
				!	sand sagebrush	
		į !		1	Indian ricegrass	
				1	little bluestem	
				I I	sideoats grama	
		ı		I I	yellow Indiangrass	) 
Bijou	Sandy Plains	1,600	1,000	500	  blue grama	45
		1,000	1,000	300	needleandthread	
		i i		i	sideoats grama	
		i i		i	little bluestem	
		j i		i	prairie sandreed	
i		j i		İ	sand bluestem	
i		ı i			sand dropseed	
İ		ı i		1	sun sedge	5
	1 1		1	Laura a area a servicio	3	
		1		1	sand sagebrush	3

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

   Map symbol	Ecological site	Total dr	y-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable   year		composition
1		Lb/acre	Lb/acre	Lb/acre		Pct
195:					1	
Valent	Deep Sands	2,450	1,750	1,150	sand bluestem	25
į		j i		İ	prairie sandreed	20
I		1 1		1	switchgrass	15
!		!!!		!	blue grama	
		!!!		1	little bluestem	
l I		1 1		I I	needleandthread	
i i				i i	yellow Indiangrass	
i		i		İ	sand dropseed	
 	Sandy Plains	2,000	1,600	   800		25
		-,	_,,,,,	i	prairie sandreed	
į		i i		İ	little bluestem	
ĺ		j j		İ	sideoats grama	10
I					needleandthread	5
					sand bluestem	
ļ		!!!			switchgrass	
ļ		!!!!			sand dropseed	
ļ Ī				 	sand sagebrush	3
196:		į į				
Valent	Deep Sands	1,950	1,450	850	sand bluestem	
	1 1		I I	prairie sandreed   blue grama		
			I I	needleandthread		
	i		i	switchgrass		
	i i		i	sand sagebrush		
į		j j		İ	Indian ricegrass	5
[		1 1		1	little bluestem	5
Į.		! !		1	sideoats grama	
ļ					yellow Indiangrass	5
Vonid	Sandy Plains	1,600	1,000	500	  blue grama	45
Į				1	needleandthread	10
				1	sideoats grama	
ļ		!!!		ļ	little bluestem	
!		!!!			prairie sandreed	
ļ				I I	sand bluestem	
i i				I I	sun sedge	
i		i i		i	sand sagebrush	3
197:					<u> </u>	
Vona	Sandy Plains	2,000	1,600	800	blue grama	25
į	-	i i		İ	prairie sandreed	25
1		1 1			little bluestem	10
I		1 1		1	sideoats grama	
ļ.		!!!		!	needleandthread	
ļ		!!!		ļ	sand bluestem	
ļ				I I	switchgrass	
i					sand sagebrush	
100.						
198:     Vona	Sandy Plains	2,000	1,600	800	  blue grama	25
İ		I i		I	prairie sandreed	25
1		1 1		I	little bluestem	
I				Į.	sideoats grama	
!				I	needleandthread	
!				1	sand bluestem	
ļ				I I	switchgrass	
				1	sand dropseed	
	: !		1			

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	Ecological site	Total dr	ry-weight pr	oduction	   Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable   year	 	composition
i		Lb/acre	Lb/acre	Lb/acre		Pct
İ		i i		ĺ	İ	
199:		1 1		I	1	
Vona Sa	ndy Plains	2,000	1,600		blue grama	25
		!!!			prairie sandreed	
		!!!			little bluestem	10
		!!!			sideoats grama	
l I		; ;			needleandthread   sand bluestem	
l I				I I	switchgrass	
l I		; ;		1	sand dropseed	
		; ;		 	sand sagebrush	3
		iii		i		
200:		i i		i	i i	
Vona Sa:	ndy Plains	2,000	1,600	800	  blue grama	25
i		į i			prairie sandreed	25
i		į i		İ	little bluestem	10
į		ı i		I	sideoats grama	10
		1 1		1	needleandthread	5
		1		1	sand bluestem	5
		1 1		I	switchgrass	5
					sand dropseed	3
		1 1		I	sand sagebrush	3
Karval Gr	avel Breaks	1,450	850		blue grama	20
		!!!			little bluestem	
		!!!		'	sideoats grama	
		!!!			prairie sandreed	
l I		; ;			Indian ricegrass   needleandthread	5 5
l I					sand dropseed	3
l I		; ;		i i		3
Midway, moist Sha	aly Plains	1,200	700	400	alkali sacaton	25
į	_	i i		i	western wheatgrass	25
į		i i		İ	blue grama	15
j		į į		ĺ	sideoats grama	15
		1 1		1	green needlegrass	10
					fourwing saltbush	5
				1	winterfat	5
		!!!		!	!	
201:	- d p1 - i		1 600			25
Vona Sa:	ndy Plains	2,000	1,600		blue grama	25 25
l I		; ;		•	prairie sandreed   little bluestem	10
l I					sideoats grama	10
l I		; ;		1	needleandthread	5
		; ;		 	sand bluestem	5
		iii		i	switchgrass	
		iii		i	sand dropseed	
i		i i		i	sand sagebrush	
į		i i		İ	i i	
Midway, moist Sh	aly Plains	1,200	700	400	alkali sacaton	25
		1 1		I	western wheatgrass	25
		1 1		I	blue grama	15
		1 1		•	sideoats grama	
		1 1			green needlegrass	
I		]		•	fourwing saltbush	
i i			1	winterfat	5	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

   Map symbol   Ecological site	Total dr	ry-weight pr	oduction	Characteristic vegetation	Maximum   rangeland
and soil name	Favorable	Normal year	Unfavorable   year	•	composition
ļ.	Lb/acre	Lb/acre	Lb/acre	<u>!</u>	Pct
202:				 	İ
Vona Sandy Plains	2,000	1,600	   800	  blue grama	l   25
	-,	_,	•	prairie sandreed	
j	i	İ	İ	little bluestem	10
ļ.			•	sideoats grama	•
l l			•	needleandthread	•
l I				sand bluestem	
			•	sand dropseed	•
į	į		•	sand sagebrush	•
   Seldom Wet Meadow	3,900	3,200	2,600	  big bluestem	30
I			•	switchgrass	•
ļ			•	yellow Indiangrass	•
l I			•	sideoats grama   Nebraska sedge	•
l I			•	little bluestem	•
	i i		•	prairie cordgrass	•
			į		
203:   Vonid Sandy Plains	1,600	1,000	l 500	  blue grama	l I 45
	-,	_,	•	needleandthread	•
İ	j		į	sideoats grama	10
1			1	little bluestem	5
!			•	prairie sandreed	•
l l			•	sand bluestem	•
l I	l		•	sand dropseed	•
			I I	sand sagebrush	l 3
į	į				
204:   Vonid  Sandy Plains	1,600	1,000	500	  blue grama	   45
I			1	needleandthread	10
I			•	sideoats grama	•
ļ.			•	little bluestem	•
l I			•	prairie sandreed	•
			•	sand bluestem	•
	i i		•	sun sedge	•
į	į		•	sand sagebrush	•
205:			 	 	
Vonid Sandy Plains	1,600	1,000	•	blue grama	45
l I			•	needleandthread	•
	l I		•	sideoats grama   little bluestem	•
				prairie sandreed	•
i	i			sand bluestem	
i	i			sand dropseed	
1			1	sun sedge	5
			 	sand sagebrush	] 3 
206:	1 600	1 000		 	   45
Vonid Sandy Plains	1,600	1,000	•	needleandthread	•
İ			•	sideoats grama	•
i	i		•	little bluestem	•
j	i			prairie sandreed	
I				sand bluestem	
I	1			sand dropseed	
				sun sedge	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

To   To   To   To   To   To   To   To		Total dr	ry-weight pr	oduction	Characteristic vegetation	Maximum rangeland
and soil name		Favorable     year	Normal year	Unfavorable		composition
		Lb/acre	Lb/acre	Lb/acre	I	Pct
i		i			i i	
206:		i i		İ	į i	
Karval	Gravel Breaks	1,400	800	400	sideoats grama	35
I		1		1	blue grama	30
I					little bluestem	15
I					galleta	10
I					needleandthread	5
ļ				1	sand dropseed	3
Midway	Shaly Plains	1,000	550	•	alkali sacaton	40
ļ		!!!!			galleta	25
!		!!!			blue grama	20 10
!					western wheatgrass   fourwing saltbush	5
!		; ;			winterfat	5
! !				I I	wincerlac	3
207:		; ;		1	! !	
Vonid	Sandy Plains	1,600	1,000	500	  blue grama	45
		-,	_,		needleandthread	10
i		i i			sideoats grama	10
i		i i			little bluestem	5
i		i i			prairie sandreed	5
i		i i		i	sand bluestem	5
į		i i		İ	sand dropseed	5
ĺ		į į		ĺ	sun sedge	5
I		1		1	sand sagebrush	3
I		1 1		1		
Midway	Shaly Plains	1,000	550	300	alkali sacaton	40
I				1	galleta	25
I				1	blue grama	20
I					western wheatgrass	10
		!!!			fourwing saltbush	5
!		!!!		!	winterfat	5
		!!!!				
208:     Vonid	Conder Dining	1 600	1,000	   E00	  blue grama	45
VOIIIQ	Sandy Flains	1,600	1,000		needleandthread	10
, 					sideoats grama	10
i		; ;		•	little bluestem	5
i		iii			prairie sandreed	5
i		i i			sand bluestem	5
i		i i			sand dropseed	5
į		i i		į	sun sedge	5
ĺ		į į		ĺ	sand sagebrush	3
İ		I İ		I	l i	
Seldom	Wet Meadow	3,900	3,200	2,600	big bluestem	30
I		1 1			switchgrass	20
I		]		•	yellow Indiangrass	20
I		<u> </u>			sideoats grama	10
!		į į		•	Nebraska sedge	
ļ		<u> </u>			little bluestem	5
ļ				1	prairie cordgrass	5
209:		1 I		I I		
Z09:     Wages	Loamy Plaine	1,600	1,000	I 500	  blue grama	35
ayea	nount trains	1,000	1,000		western wheatgrass	30
 				•	green needlegrass	15
i i		; ;			buffalograss	5
i I		; ;			fourwing saltbush	5
;		i i		•	needleandthread	5
I						

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

Map symbol	   Ecological site	Total dry-weight production		Characteristic vegetation	Maximum rangeland	
and soil name	 	Favorable     year	Normal   year	Unfavorable   year		composition
	Ī	Lb/acre	Lb/acre	Lb/acre		Pct
	!	! !	l	!	!	
210:	 	1,600	1 000		lhlus mans	35
Wages	Loamy Plains	1,600	1,000 	J 500	blue grama    western wheatgrass	
	 		! 		green needlegrass	
	İ	i i	İ	i	buffalograss	
	j	j i	İ	İ	fourwing saltbush	5
			l	1	needleandthread	5
		! !	l			
211: Wages, dry	  Loamy Plaine	1,200	l   800	200	  blue grama	50
Mages, dry	Doamy Flains	1,200	000 	200	western wheatgrass	
	 	i i	i I	i	galleta	
	j	j i	İ	İ	buffalograss	5
		1	l	1	fourwing saltbush	5
		[ ]		1	green needlegrass	
					sand dropseed	5
212.			l I	1		
212: Wages	  Loamy Plains	1,600	   1,000	l 500	  blue grama	35
nages	Louis Trains	1 1/000	17000 	1	western wheatgrass	
		i i	İ	i	green needlegrass	
	İ	j i	İ	İ	buffalograss	5
			l	1	fourwing saltbush	
	!	! !		!	needleandthread	5
**1	   C1   D1	1 450		1 450	12.2	
Karval	Gravel Breaks	1,450	850 	450 	blue grama   little bluestem	
	 	1	l I		sideoats grama	
	i İ	i i	İ	i	prairie sandreed	
	j	j i	İ	İ	Indian ricegrass	5
		1	l	I	needleandthread	
	!	!	l	!	sand dropseed	3
013.		!				
213: Weld	  Loamy Plains	1,600	   1,000	l 500	  blue grama	35
HCIG	Ioung Trains	1 1,000	17000 	300	western wheatgrass	
	į	i i	İ	i	green needlegrass	
		1	l	I	buffalograss	5
	!	! !		!	fourwing saltbush	
					needleandthread	5
214:	l I		l I	I I	<u> </u>	
Weld, dry	Loamy Plains	1,200	I 800	1 200	blue grama	50
•	i -	i i	İ	i	western wheatgrass	
	ĺ	j j	ĺ	İ	galleta	10
		[ ]		ļ.	buffalograss	
		! !			fourwing saltbush	
	 		l I	1	winterfat	3
215:	1 		! 	! 		
Wiley	Loamy Plains	1,600	1,000	500	blue grama	35
-	i -	i i	İ	i	western wheatgrass	
	ĺ	j j	ĺ	İ	green needlegrass	15
			l	1	buffalograss	
		! !			fourwing saltbush	
			  -	1	needleandthread	5
216:	I 		l 	I I		
Wiley	Loamy Plains	1,600	1,000	500	blue grama	35
		2,555	2,550	i	western wheatgrass	
		ı	l	I	green needlegrass	15
	I	ı i	I	I	buffalograss	
	!	į l	l	ļ.	fourwing saltbush	
				I	needleandthread	5
	I	1	I	I	ı	

Table 8.--Rangeland Productivity and Characteristic Plant Communities--Continued

		Total dr	y-weight pr	oduction		Maximum
Map symbol	Ecological site				Characteristic vegetation	rangeland
and soil name	and soil name	Favorable	Normal	Unfavorable		composition
		year	year	year		
		Lb/acre	Lb/acre	Lb/acre		Pct
217:	 			 	 	
Wilid	Loamy Plains	1,200	800	200	blue grama	50
		1 1			western wheatgrass	20
		1 1			galleta	10
	1	1 1			buffalograss	5
	1	1 1			fourwing saltbush	5
	1	1 1			needleandthread	3
218:	1	1 1				
Water.	1	1 1				
	1	1 1				
219:	1	1 1				
Gravel pits.	1	1 1				
	1	1 1				
220:		1 1				
Access denied.		1 1				
	1	ı i		I	i i	

Table 9.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height.)

Map symbol	Trees having predicted 20-year average height, in feet, of				
and soil name	<8	8-15	16-25	26-35	
	[			1	
.01: Apishapa, rarely ponded-	Common lilac,   fourwing saltbush,   Rocky Mountain   juniper, Siberian   peashrub, skunkbush   sumac	plains cottonwood	  Siberian elm       		
02:	 	 	 		
Arvada	Eastern redcedar,   fourwing saltbush,   green ash, Rocky   Mountain juniper,   Siberian peashrub,   skunkbush sumac	  Ponderosa pine,   Siberian elm     	           		
.03:	İ	İ	İ	İ	
Ascalon	American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm    -  -  -  -  -  -  -  -	                     	
.04:		! 	! 		
Ascalon	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub, skunkbush sumac,	spruce, bur oak,   common hackberry,   eastern redcedar,	Siberian elm 	                   	
L05:	 	 	 		
Ascalon	American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm 	                   	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	ITEES HA	ving predicted 20-year	average neight, in				
and soil name	<8	8-15	16-25	26-35			
L06:		 	 				
Ascalon, dry	common chokecherry,	spruce, bur oak,   common hackberry,   eastern redcedar,   green ash,   osageorange,   pinyon, ponderosa	Siberian elm    -  -  -  -  -  -  -	 			
07: Ascalon, dry	common chokecherry,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm                   	 	1		1
Ascalon, dry	common chokecherry,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm                     	  saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm 	 

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of				
and soil name	<8	8-15	16-25	26-35	
				1	
09:					
Haxtun	American plum,	Austrian pine, black	Siberian elm		
	common chokecherry,	locust, blue			
	common lilac,	spruce, bur oak,			
	fourwing saltbush,	common hackberry,			
	Nanking cherry,	eastern redcedar,		İ	
	Peking cotoneaster,	green ash,		İ	
	Siberian peashrub,	osageorange,		İ	
	skunkbush sumac,	pinyon, ponderosa		İ	
	western sandcherry	pine, Rocky		į	
	i	Mountain juniper,		i	
	i	Russian mulberry,		i	
	i	Scotch pine, white		i	
	i	fir		i	
	İ			i	
10:	<u> </u>	 		İ	
Ascalon, dry	American plum,	Austrian pine, black	Siberian elm	i	
	common chokecherry,			i	
	common lilac,	spruce, bur oak,		i	
	fourwing saltbush,			1	
	Nanking cherry,	eastern redcedar,		1	
	Peking cotoneaster,			l I	
	Siberian peashrub,	_		l I	
	skunkbush sumac,			1	
		pinyon, ponderosa		l I	
	western sandcherry				
	1	Mountain juniper,			
		Russian mulberry,			
	!	Scotch pine, white		!	
		fir			
	 	 	  Gibamiam alm	l i	
Haxtun, dry		Austrian pine, black	Siberian eim		
	common chokecherry,				
	common lilac,	spruce, bur oak,			
	fourwing saltbush,	common hackberry,			
	Nanking cherry,	eastern redcedar,			
	Peking cotoneaster,	_			
	Siberian peashrub,				
	skunkbush sumac,	pinyon, ponderosa			
	western sandcherry			1	
	!	Mountain juniper,			
	!	Russian mulberry,			
	1	Scotch pine, white			
	<u> </u>	fir			
	!				
11:				Ţ	
Bacid	Common chokecherry,		Siberian elm		
	common lilac,	eastern redcedar,		1	
	fourwing saltbush,	green ash,		1	
	Nanking cherry,	honeylocust,		1	
	Peking cotoneaster,				
	Siberian peashrub,				
	skunkbush sumac,	Rocky Mountain			
	western sandcherry	juniper, Russian			

Table 9.--Windbreaks and Environmental Plantings--Continued

	Trees having predicted 20-year average height, in feet, of				
Map symbol and soil name	   <8	8-15	16-25	26-35	
112: Bankard, occasionally flooded	American plum,   common chokecherry,   common lilac,   Nanking cherry,   osageorange, Peking	Blue spruce, common   hackberry, eastern   redcedar, golden   willow, green ash,   honeylocust,   ponderosa pine,	      Siberian elm		
	common chokecherry,	ponderosa pine,		Plains cottonwood	
113: Bijou	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm                 	     	
	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm               	                   	
115: Bijou, moist	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm                 	                     	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of					
and soil name	<8	8-15	16-25	26-35		
16: Blakeland		  Austrian pine,   ponderosa pine     		         		
17: Bresser	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm 	                     		
.18: Campo	common chokecherry,	ash, honeylocust, ponderosa pine, Rocky Mountain juniper	  Siberian elm     	               		
Canyon.  Rock outcrop.  20: Colby	            Common lilac,	          Bur oak, eastern	        Siberian elm	 		
	pinyon, Rocky	redcedar, green ash, honeylocust,		 		
.21: Colby	•	redcedar, green ash, honeylocust,	  Siberian elm       	             		
22: Colby	pinyon, Rocky	redcedar, green ash, honeylocust,	Siberian elm    -  -  -	           		

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	ļ	1	1	1					
and soil name	<8 I	8-15 	16-25 	26-35					
22: Weld	fourwing saltbush,	eastern redcedar, green ash, honeylocust, osageorange, ponderosa pine, Rocky Mountain	  Siberian elm             	               					
23:	 	 	 	 					
Firstview	Eastern redcedar,   fourwing saltbush,   green ash, Rocky   Mountain juniper,   Siberian peashrub,   skunkbush sumac	Ponderosa pine,   Siberian elm	      	           					
24: Fort Collins	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, siberian peashrub,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm 	                   					
25:	 	 	 	 					
Fort Collins	American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry	spruce, bur oak,   common hackberry,   eastern redcedar,   green ash,	Siberian elm 	 	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm   	t contract of the contract of	1	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees ha	ving predicted 20-year	r average neight, in	Teet, OI
and soil name	<8	8-15	16-25	26-35
27: Fort Collins	    American plum,	  -  Austrian pine, black	    Siberian elm	
	common chokecherry,	:		İ
	common lilac, fourwing saltbush,	spruce, bur oak,	İ	1
		eastern redcedar,	 	İ
	Peking cotoneaster,	:	İ	İ
	Siberian peashrub,	:		!
	skunkbush sumac,   western sandcherry	pinyon, ponderosa	İ	1
	western sandenerry	Mountain juniper,	 	İ
	İ	Russian mulberry,	İ	İ
		Scotch pine, white		1
	 	fir 	 	1
latner	Common chokecherry,	Common hackberry,	  Siberian elm	i
		eastern redcedar,		
	fourwing saltbush,   Nanking cherry,	green asn,   honeylocust,	 	1
	Peking cotoneaster,	:	 	i
	Siberian peashrub,	ponderosa pine,		Ì
		Rocky Mountain		
	western sandcherry	Juniper, Russian   mulberry	 	
	İ	İ	İ	į
18:				
ort Collins	American plum, common chokecherry,	Austrian pine, black	siberian eim 	
	common lilac,	spruce, bur oak,		į
	fourwing saltbush,	:		ļ.
	Nanking cherry,   Peking cotoneaster,	eastern redcedar,	l I	
	Siberian peashrub,	•	 	İ
		pinyon, ponderosa	İ	İ
	western sandcherry	:		!
	1	Mountain juniper,   Russian mulberry,	l I	
	 	Scotch pine, white	 	İ
	į	fir	ĺ	į
azor, moist	American plum.	  Black locust, common	  Siberian elm	 
	common chokecherry,	:		i
	common lilac,	ash, honeylocust,		1
	eastern redcedar, fourwing saltbush,	ponderosa pine,	1	
	Nanking cherry,	Rocky Mountain   juniper	 	
	Peking cotoneaster,	•		i
	Siberian peashrub,	]		ļ.
	skunkbush sumac	 	 	1
9:	i	İ		i
ort		Austrian pine, black	Siberian elm	
	common chokecherry, common lilac,	locust, blue   spruce, bur oak,	 	 
	fourwing saltbush,	:	! 	İ
	Nanking cherry,	eastern redcedar,	l	İ
	Peking cotoneaster,	:		!
	Siberian peashrub,   skunkbush sumac,	osageorange, pinyon, ponderosa	] 	1
	western sandcherry	:	! 	
	İ	Mountain juniper,	Ī	İ
		Russian mulberry,		
	 	Scotch pine, white   fir	 	 
	!	1	ı	I

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of				
and soil name	<8	8-15	16-25	26-35	
l30: Fort	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub, skunkbush sumac, western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm                     	                       	
131: Fort	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm                   	                         	
Karval.				 	
Fort	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub, skunkbush sumac, western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm 	                       	
Razor	common chokecherry, common lilac, eastern redcedar, fourwing saltbush,	ash, honeylocust, ponderosa pine, Rocky Mountain juniper	Siberian elm    -  -  -  -  -  -  -	               	
133: Haversid, rarely flooded	Eastern redcedar,   fourwing saltbush,   green ash, Rocky   Mountain juniper,   Siberian peashrub,   skunkbush sumac	 	             	             	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees na	ving predicted 20-year	r average neight, in :	reet, or
and soil name	<8	8-15	16-25	26-35
34: Haverson, rarely flooded	   Eastern redcedar,   fourwing saltbush,   green ash, Rocky   Mountain juniper,   Siberian peashrub,   skunkbush sumac	  Ponderosa pine,  Siberian elm     		 
35: Haxtun	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm	                         
l36: Haxtun, dry	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm               	                       
137: Haxtun, dry	American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm             	                       
Olney	common chokecherry,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm 	                       

Table 9.--Windbreaks and Environmental Plantings--Continued

Trees having predicted 20-year average height, in feet, of			
<8	8-15	16-25	26-35
			1
	İ		İ
American plum,	Austrian pine, black	Siberian elm	
common chokecherry,	locust, blue		İ
common lilac,	spruce, bur oak,	İ	i
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lamonicon mlum	  }	  Gibamian alm	I
		lermetran erm	
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•	pinyon, ponderosa		
western sandcherry	pine, Rocky		
	Mountain juniper,		
	Russian mulberry,		
	Scotch pine, white		
	fir		
	l		
	l		
American plum,	Austrian pine, black	Siberian elm	
common chokecherry,	locust, blue		
common lilac,	spruce, bur oak,	l	
fourwing saltbush,	common hackberry,		
Nanking cherry,	eastern redcedar,	1	1
Peking cotoneaster,	green ash,		İ
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American plum	l Augtrian pine black	l Siberian elm	
		l Proetran erm	
		] 	I
•	•	1	
	•		!
_			!
Siberian peashrub,	osageorange,		1
skunkbush sumac,	pinyon, ponderosa		1
western sandcherry	pine, Rocky		
	Mountain juniper,		1
	Russian mulberry,		1
I	Scotch pine, white		1
	American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry     American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry     American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry   American plum,   common chokecherry,   peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry,   common chokecherry,   common chokecherry,   common chokecherry,   skunkbush sumac,   siberian peashrub,   skunkbush sumac,   skunkbush sumac,	American plum,   Austrian pine, black   common chokecherry,   locust, blue   common lilac,   spruce, bur oak,   fourwing saltbush,   common hackberry,   eastern redcedar,   Peking cotoneaster,   green ash,   siberian peashrub,   sageorange,   kunkbush sumac,   pinyon, ponderosa   western sandcherry,   locust, blue   common chokecherry,   locust, blue   common lilac,   spruce, bur oak,   siberian peashrub,   sageorange,   skunkbush sumac,   pinyon, ponderosa   western sandcherry   locust, blue   spruce, bur oak,   siberian peashrub,   sageorange,   skunkbush sumac,   pinyon, ponderosa   western sandcherry   locust, blue   spruce, bur oak,   siberian peashrub,   sageorange,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   Mountain juniper,   Russian mulberry,   Scotch pine, white   fir   locust, blue   spruce, bur oak,   sommon hackberry,   eastern redcedar,   peking cotoneaster,   green ash,   siberian peashrub,   sageorange,   skunkbush sumac,   pinyon, ponderosa   western sandcherry   locust, blue   spruce, bur oak,   common chokecherry,   castern redcedar,   pine, Rocky   Mountain juniper,   Russian mulberry,   Scotch pine, white   fir   fir   locust, blue   spruce, bur oak,   common chokecherry,   locust, blue   spruce, bur oak,   common chokecherry,   scotch pine, white   fir   locust, blue   spruce, bur oak,   common chokecherry,   locust, blue   spruce, bur oak,   common chokecherry,   locust, blue   spruce, bur oak,   common chokecherry,   sageorange,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   mountain juniper,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   mountain juniper,   Russian mulberry,   sageorange,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   mountain juniper,   Russian mulberry,   sageorange,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   mountain juniper,   Russian mulberry,   sageorange,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   mountain juniper,   Russian mulberry,   sageorange,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   m	American plum,   Austrian pine, black   Siberian elm   common chokecherry,   locust, blue   spruce, bur oak,   fourwing saltbush,   common hackberry,   eastern redcedar,   Feking cotoneaster,   green ash,   Siberian peashrub,   skunkbush sumac,   pinyon, ponderosa   pine, Rocky   Mountain juniper,   Russian mulberry,   Scotch pine, white   fir

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of			
and soil name	<8	8-15	16-25	26-35
41.				
41: Kim	:	redcedar, green ash, honeylocust,	  Siberian elm           	             
42: Kim	pinyon, Rocky	redcedar, green ash, honeylocust,	  Siberian elm         	           
43:	 	 	 	l I
Kimst	pinyon, Rocky	redcedar, green ash, honeylocust,	Siberian elm 	             
44:	 	 		
Kimst	pinyon, Rocky	redcedar, green ash, honeylocust,	Siberian elm           	             
45:	İ	İ	İ	į
Las animas, occasionally flooded	•	Golden willow, green ash, honeylocust, plains cottonwood	  Siberian elm         	             
46:	i İ	i İ	i İ	
Limon, rarely flooded	Eastern redcedar,   fourwing saltbush,   green ash, Rocky   Mountain juniper,   Siberian peashrub,   skunkbush sumac	Ponderosa pine,   Siberian elm         	           	           
47:	İ		İ	i
Limon, moist, rarely flooded	   Eastern redcedar,   fourwing saltbush,   green ash, Rocky   Mountain juniper,   Siberian peashrub,   skunkbush sumac	  Ponderosa pine,   Siberian elm     	           	             

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of				
and soil name	<8	8-15	16-25	26-35	
148: Manzanola	fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	eastern redcedar,   green ash,   honeylocust,   osageorange,   ponderosa pine,   Rocky Mountain	  Siberian elm             	 	
149: Manzanst, rarely flooded	common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	eastern redcedar,   green ash,   honeylocust,   osageorange,   ponderosa pine,   Rocky Mountain	  Siberian elm             	 	
150:  Manzanst  151:  Midway.  152:  Midway, moist.	fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	eastern redcedar,   green ash,   honeylocust,   osageorange,   ponderosa pine,   Rocky Mountain	  Siberian elm                     		
153: Midway. Razor	· -	      Black locust, common	      Siberian elm		
154.	fourwing saltbush,	ash, honeylocust,   ponderosa pine,   Rocky Mountain   juniper			
	common chokecherry, common lilac, eastern redcedar, fourwing saltbush,	ash, honeylocust, ponderosa pine, Rocky Mountain juniper	    Siberian elm           	 	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	l			
and soil name	<8	8-15	16-25	26-35
	I		I	I
.55:				
Midway.	!	[	!	!
Rock outcrop.	 	 	 	 
56:	 		 	
Midway, moist.	! 	! 	! 	i i
Rock outcrop, moist.	 	 	 	 
.57:				I
Nunn	Common chokecherry,		Siberian elm	
	common lilac,	eastern redcedar,		
	fourwing saltbush,	green ash,		
	Nanking cherry,	honeylocust,		!
	Peking cotoneaster,			!
	Siberian peashrub,			1
	skunkbush sumac,	Rocky Mountain		1
	western sandcherry	!		!
		mulberry		
58:	 	I I	 	I I
Nunn	Common chokecherry,	Common hackberry,	  Siberian elm	i
	common lilac,	eastern redcedar,		i
	fourwing saltbush,	:	i	İ
	Nanking cherry,	honeylocust,		i
	Peking cotoneaster,	•	! 	i
	Siberian peashrub,		! 	i
	skunkbush sumac,	Rocky Mountain	! 	İ
	western sandcherry		! 	İ
	webtern bandenerry	mulberry	! 	i
	İ		İ	i
Sampson, rarely flooded-	American plum,	Austrian pine, black	Siberian elm	i
	common chokecherry,	locust, blue		
	common lilac,	spruce, bur oak,		
	fourwing saltbush,	common hackberry,		
	Nanking cherry,	eastern redcedar,		
	Peking cotoneaster,	green ash,		
	Siberian peashrub,	osageorange,		
	skunkbush sumac,	pinyon, ponderosa		
	western sandcherry	pine, Rocky		1
		Mountain juniper,		
	I	Russian mulberry,		
	I	Scotch pine, white		
		fir		I
E0.				
59: Nunn, dry	  Common chokecherry	  Common hackberry	  Siberian elm	 
, ury	common lilac,	eastern redcedar,		
	fourwing saltbush,	:	I 	i i
	Nanking cherry,	honeylocust,	I 	i i
	Peking cotoneaster,		I 	i i
	Siberian peashrub,		! 	i
	skunkbush sumac,	Rocky Mountain	! 	i
	western sandcherry		! 	i
		mulberry	! 	i
	I .	1	I	1

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	<u> </u>			
and soil name	<8	8-15	16-25	26-35
59:			 	1
Sampson, dry, rarely	I I	 	l I	I
flooded	American plum,	  Austrian pine, black	l  Siberian elm	
1100000	common chokecherry,		DIDCITUM CIM	
	common lilac,	spruce, bur oak,	 	
	fourwing saltbush,		 	
		eastern redcedar,	 	
	Peking cotoneaster,		! 	i
	Siberian peashrub,		! 	i
		pinyon, ponderosa	! 	i
	western sandcherry			i
	i	Mountain juniper,	i İ	i
	i	Russian mulberry,	i İ	i
	i	Scotch pine, white	i İ	i
	İ	fir	İ	i
	İ	İ		İ
0:	1			I
Olnest		Austrian pine, black	Siberian elm	!
	common chokecherry,			!
	common lilac,	spruce, bur oak,		!
	fourwing saltbush,	•		
	Nanking cherry,	eastern redcedar,		!
	Peking cotoneaster,		  -	
	Siberian peashrub,	•		
	:	pinyon, ponderosa	  -	
	western sandcherry			
		Mountain juniper,	 	
		Russian mulberry,	İ	
	l I	Scotch pine, white   fir	l I	I
	I I		 	İ
51:	i	İ		i
lnest	American plum,	Austrian pine, black	Siberian elm	
	common chokecherry,	locust, blue		
	common lilac,	spruce, bur oak,		
	fourwing saltbush,	common hackberry,		1
	Nanking cherry,	eastern redcedar,		
	Peking cotoneaster,	green ash,		
	Siberian peashrub,	osageorange,		
	skunkbush sumac,	pinyon, ponderosa		
	western sandcherry	pine, Rocky		1
		Mountain juniper,		1
	1	Russian mulberry,		1
		Scotch pine, white		
		fir		!
2:	l I	l I	l İ	
2: lnest	  American plum,	  Austrian pine, black	ı  Siberian elm	i
	common chokecherry,			i
	common lilac,	spruce, bur oak,	İ	i
	fourwing saltbush,			i
	Nanking cherry,	eastern redcedar,		i
	Peking cotoneaster,			i
	Siberian peashrub,			i
		pinyon, ponderosa		i
	western sandcherry			i
	i	Mountain juniper,		i
	i	Russian mulberry,		i
	İ	Scotch pine, white		İ

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of			
and soil name	<8	8-15	16-25	26-35
	1	I		1
63:	1			
Olnest	- American plum,	Austrian pine, black	Siberian elm	
	common chokecherry,	locust, blue		
	common lilac,	spruce, bur oak,		
	fourwing saltbush,	common hackberry,		
	Nanking cherry,	eastern redcedar,		
	Peking cotoneaster,	green ash,		
	Siberian peashrub,	osageorange,		İ
	skunkbush sumac,	pinyon, ponderosa	İ	İ
	western sandcherry	pine, Rocky		İ
	İ	Mountain juniper,	İ	İ
	İ	Russian mulberry,	İ	İ
	i	Scotch pine, white	İ	i
	i	fir	İ	i
	i	i	' 	i
54:	i	i	' 	i
Olney	- American plum,	Austrian pine, black	Siberian elm	i
-	common chokecherry,	:		i
	common lilac,	spruce, bur oak,		i
	fourwing saltbush,	•		i
	Nanking cherry,	eastern redcedar,		i
	Peking cotoneaster,	:		i
	Siberian peashrub,	•	! 	i
	skunkbush sumac,	pinyon, ponderosa	 	
	western sandcherry	:	 	
	western sandinerry	Mountain juniper,	 	
	1	Russian mulberry,	 	
	1	Scotch pine, white	 	
	1	fir	 	
	1	III	l i	
65 <b>:</b>	1	1	l İ	I
	lamenicen mlum	Austrian pine, black	  Gibamiam alm	I
Olney	- American plum,	:	siberian eim	
	common chokecherry,	:	l I	I
	common lilac,	spruce, bur oak,	l I	I
		common hackberry,	İ	
	Nanking cherry,	eastern redcedar,	1	
	Peking cotoneaster,	:	1	
	Siberian peashrub,	osageorange,	 	
	skunkbush sumac,	pinyon, ponderosa	  -	1
	western sandcherry	•	  -	1
	1	Mountain juniper,	  -	1
	1	Russian mulberry,	  -	!
		Scotch pine, white		I
	1	fir		!
	1	1		I
56:	1	1		1
Olney	- American plum,	Austrian pine, black	Siberian elm	!
	common chokecherry,	locust, blue		
	common lilac,	spruce, bur oak,		
	fourwing saltbush,	common hackberry,		1
	Nanking cherry,	eastern redcedar,		1
	Peking cotoneaster,	green ash,		1
	Siberian peashrub,	osageorange,		1
	skunkbush sumac,	pinyon, ponderosa		1
	western sandcherry	pine, Rocky		1
		Mountain juniper,		1
	1	Russian mulberry,		1
	İ	Scotch pine, white		İ
	i	fir		i
	•	•	:	1

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of				
and soil name	<8	8-15	16-25	26-35	
.67:				!	
Olney	•	Austrian pine, black	Siberian elm		
	common chokecherry,				
	common lilac,	spruce, bur oak,		!	
	fourwing saltbush,				
		eastern redcedar,		!	
	Peking cotoneaster,				
	Siberian peashrub,				
	•	pinyon, ponderosa	1		
	western sandcherry	: -		ļ	
	I	Mountain juniper,	1		
	I	Russian mulberry,	1		
		Scotch pine, white	 		
	1	fir	l I	 	
68:	1	 	l I	 	
01ney	-   American plum	  Austrian pine, black	l Siberian elm	 	
OTUGA	- American plum, common chokecherry,		l Procrian GIM		
	common lilac,	spruce, bur oak,	 	I I	
	fourwing saltbush,		 	I I	
	Nanking cherry,	eastern redcedar,	 		
	Peking cotoneaster,		 	1	
	Siberian peashrub,		 	1	
	•	pinyon, ponderosa	 	1	
	western sandcherry	!	 		
		Mountain juniper,	! 	İ	
	i	Russian mulberry,		i	
	i	Scotch pine, white		i	
	İ	fir		İ	
	j	İ		į	
Midway.					
69:					
Otero	- American plum,	Green ash,	Siberian elm		
	common chokecherry,	honeylocust,			
	common lilac,	osageorange,			
		ponderosa pine			
	fourwing saltbush,				
	pinyon, Rocky	1			
	Mountain juniper,	!		!	
	Siberian peashrub,	!		!	
	silver				
	buffaloberry,	!		!	
	skunkbush sumac		  -		
70.	1		  -		
70:	lamonicon maum	  Cmaan agh	  Siberian elm	1	
Oterodry	•		Siberian eim		
	common chokecherry,		İ		
		osageorange,	] 	I I	
	•	ponderosa pine	] 	I I	
	fourwing saltbush,	1	] !	1	
	pinyon, Rocky	1	] !	1	
	Mountain juniper,	1	] !		
	Siberian peashrub,	1	] !		
	silver	1	] !		
	buffaloberry,   skunkbush sumac	1	] !	1	
	. delinebileh elimad		i .		

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of			
and soil name	<8	8-15	16-25	26-35
				I
71:	[			1
Oterodry	American plum,	Green ash,	Siberian elm	
	common chokecherry,	honeylocust,		
	common lilac,	osageorange,		
	eastern redcedar,	ponderosa pine		
	fourwing saltbush,	I		
	pinyon, Rocky	I		[
	Mountain juniper,			
	Siberian peashrub,	I		[
	silver	I		[
	buffaloberry,	I		
	skunkbush sumac			I
	1		1	
2: latner	  Common chokecherry,	  Common hackberry	  Siberian elm	l I
Tucher	common lilac,	eastern redcedar,	DIDCITUM CIM	1
	fourwing saltbush,	:	 	1
	•	honeylocust,	 	1
	Peking cotoneaster,		 	1
	Siberian peashrub,		 	1
	skunkbush sumac,	Rocky Mountain	 	1
	western sandcherry		! 	i i
		mulberry	! 	i
				i
73:	İ	İ	i İ	İ
Platner	Common chokecherry,	Common hackberry,	Siberian elm	
	common lilac,	eastern redcedar,		
	fourwing saltbush,	green ash,		
	Nanking cherry,	honeylocust,		
	Peking cotoneaster,	osageorange,		
	Siberian peashrub,	ponderosa pine,		
	skunkbush sumac,	Rocky Mountain		[
	western sandcherry	juniper, Russian		[
	<u> </u>	mulberry		ļ.
\aaalan	 	 	  Gibamian alm	
Ascalon		Austrian pine, black	Siberian eim	
	common chokecherry,		İ	1
		spruce, bur oak,	l I	I I
	fourwing saltbush,   Nanking cherry,		l I	I I
		eastern redcedar,	l I	I I
	Peking cotoneaster,		 	I I
	Siberian peashrub,		 	I I
	skunkbush sumac,	pinyon, ponderosa	] 	I I
	western sandcherry		] 	1
	1	Mountain juniper,	 	1
	1	Russian mulberry,	] 	1
	I I	Scotch pine, white	 	I I
		<del>-</del>	 	i
74:	İ	İ	İ	İ
leasant, rarely ponded-	American plum,	Black locust, common	Siberian elm	
	common chokecherry,	hackberry, green		1
	common lilac,	ash, honeylocust,		I
	eastern redcedar,	ponderosa pine,		I
	fourwing saltbush,	Rocky Mountain		I
	Nanking cherry,	juniper		I
	Peking cotoneaster,			I
	Siberian peashrub,	I	I	İ
	Diborian Poublicab,	1	1	1

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of			
and soil name	<8	8-15	16-25	26-35
	l			
175: Rago, rarely flooded	common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub, skunkbush sumac,	eastern redcedar,   green ash,   honeylocust,   osageorange,   ponderosa pine,   Rocky Mountain	  Siberian elm         	
	western sandcherry		 	
	 	mulberry	 	
176:				i
Rago, dry, rarely				
flooded	fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	eastern redcedar,   green ash,   honeylocust,   osageorange,   ponderosa pine,   Rocky Mountain	Siberian elm             	           
177:	ĺ			İ
Razor	common chokecherry, common lilac, eastern redcedar, fourwing saltbush,	ash, honeylocust, ponderosa pine, Rocky Mountain juniper	Siberian elm             	           
178:	İ	İ	İ	i
Razor, moist	common chokecherry,	ash, honeylocust, ponderosa pine, Rocky Mountain juniper	Siberian elm             	             
179:	İ	İ	İ	j
Sampson, rarely flooded-	common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm                   	                 

Table 9.--Windbreaks and Environmental Plantings--Continued

commu-   four-   Nank-   Pekis     Sibes     skund-   west-   commu-   commu-   commu-   four-   Nank-   Pekis     Sibes     skund-   west-   commu-   commu-   four-   Nank-   Pekis     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   west-   sibes     skund-   skund-   sibes     skund-   skund-   skund-   sibes     skund-   sk	on chokecherry, on lilac, wing saltbush, ing cherry, rig cotoneaster, rian peashrub, kbush sumac, ern sandcherry  can plum, on chokecherry, on lilac,	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry, Scotch pine, white fir  Austrian pine, black locust, blue spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry,	 	26-35
Sampson, dry, rarely flooded	on chokecherry, on lilac, wing saltbush, ing cherry, ng cotoneaster, rian peashrub, kbush sumac, ern sandcherry  can plum, on chokecherry, on lilac, wing saltbush, ing cherry, ng cotoneaster, rian peashrub, kbush sumac,	locust, blue spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry, Scotch pine, white fir  Austrian pine, black locust, blue spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry,	 	
comms   comms   four   Nank.   Pekin   Sibe:   skuni   wester   sibe:   skuni   sibe:   skuni	on chokecherry, on lilac, wing saltbush, ing cherry, ng cotoneaster, rian peashrub, kbush sumac, ern sandcherry  can plum, on chokecherry, on lilac, wing saltbush, ing cherry, ng cotoneaster, rian peashrub, kbush sumac,	locust, blue spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry, Scotch pine, white fir  Austrian pine, black locust, blue spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry,	 	
Satanta	on chokecherry, on lilac, wing saltbush, ing cherry, ng cotoneaster, rian peashrub, kbush sumac,	locust, blue spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa pine, Rocky Mountain juniper, Russian mulberry,	  Siberian elm             	         
Satanta, dry		Scotch pine, white   fir 	     	
Seldom, rarely flooded Americ	can plum, on chokecherry, on lilac, wing saltbush, ing cherry, ng cotoneaster, rian peashrub, kbush sumac, ern sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	  Siberian elm   	
comm Nank osag coto Sibe silv buff skun	on chokecherry, on lilac, ing cherry, eorange, Peking neaster, rian peashrub,	Blue spruce, common   hackberry, eastern   redcedar, golden   willow, green ash,   honeylocust,   ponderosa pine,   Rocky Mountain   juniper, Russian   mulberry	İ I	Plains cottonwood
184:		 	i   	i I
Midway.		1	1	] 

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in			n leet, OI	
and soil name	<8	8-15	16-25	26-35	
.85:			1		
Midway, moist.	! 	 	 	i I	
	İ			i	
86:				I	
Sundance		Austrian pine, black	Siberian elm		
	common chokecherry,	:			
	common lilac, fourwing saltbush,	spruce, bur oak,	l İ	I I	
		eastern redcedar,	 	! 	
	Peking cotoneaster,	:		i	
	Siberian peashrub,	osageorange,		ĺ	
	skunkbush sumac,	pinyon, ponderosa		I	
	western sandcherry			!	
		Mountain juniper,	 		
	 	Russian mulberry, Scotch pine, white	 	1	
	! 	fir	! 	i	
	į	i		i	
87:	I	I	I	I	
Table Mountain, rarely	!	<u> </u>		ļ.	
flooded		Austrian pine, black	Siberian elm		
	common chokecherry,	spruce, bur oak,	l İ	I I	
	fourwing saltbush,		 	i I	
	Nanking cherry,	eastern redcedar,	 	i	
	Peking cotoneaster,	green ash,	İ	İ	
	Siberian peashrub,	osageorange,		I	
	skunkbush sumac,	pinyon, ponderosa		!	
	western sandcherry		 		
	 	Mountain juniper,   Russian mulberry,	 		
	<u> </u>	Scotch pine, white	 	i	
	İ	fir	İ	İ	
	<u> </u>			I	
88:			 	1	
Travessilla.	 	 	 		
Rock outcrop.		! 	! 	i	
_	į	j	İ	İ	
89:		[		I	
Truckton	•	Austrian pine, black	Siberian elm		
	common chokecherry,	locust, bur oak,   common hackberry,	İ	1	
	common lilac, Peking cotoneaster,		 	 	
	pinyon, Siberian	eastern redcedar,		i	
	peashrub, skunkbush	green ash,		İ	
	sumac, western	honeylocust,	[	Į.	
	sandcherry	osageorange,	1		
	 	ponderosa pine,	İ	1	
	! 	Rocky Mountain   juniper	! 	i	
	i			i	
90:	I			I	
ruckton		Austrian pine, black	Siberian elm	!	
	common chokecherry,		 	Į.	
	common lilac, Peking cotoneaster,	common hackberry, Douglas fir,	] 	I I	
	pinyon, Siberian	bouglas fir,   eastern redcedar,	1 		
	peashrub, skunkbush			i	
	sumac, western	honeylocust,	I	I	
	sandcherry	osageorange,	<u> </u>	ļ.	
		ponderosa pine,	 	Į.	
	 	Rocky Mountain	] 	I I	
	I	juniper	I	I	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet,						
and soil name	<8	8-15	16-25	26-35			
91: Truckton, dry	common chokecherry, common lilac, Peking cotoneaster,	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm               	 			
92: Truckton, dry	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm               	                   			
193: Valent	  Eastern redcedar,   pinyon, Rocky   Mountain juniper,   Siberian peashrub,   Woods rose	  Austrian pine,   ponderosa pine     	 	 			
L94: Valent	:	  Austrian pine,   ponderosa pine   	       	       			
Bijou	common chokecherry, common lilac, Peking cotoneaster,	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm                 	                     			
195: Valent	•	  Austrian pine,   ponderosa pine     	         	           			

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	İ	ving predicted 20-year		
and soil name	<8	8-15	16-25	26-35
				1
95:	1	I		
Vona	American plum,	Austrian pine, black	Siberian elm	
	common chokecherry,	locust, bur oak,		
	common lilac,	common hackberry,	I	
	Peking cotoneaster,	Douglas fir,	İ	İ
	pinyon, Siberian	eastern redcedar,	İ	į
	peashrub, skunkbush	green ash.	i İ	i
	sumac, western	honeylocust,	i I	i
	sandcherry	osageorange,	! 	i
	Danieller	ponderosa pine,	! 	i
	! !	Rocky Mountain	I I	1
	 		] 	1
	1	juniper	İ	1
_	1	1	 	1
96:				
Valent		Austrian pine,		
		ponderosa pine	<u> </u>	
	Mountain juniper,	l		
	Siberian peashrub,			
	Woods rose	l		
/onid	American plum,	Austrian pine, black	Siberian elm	
	common chokecherry,	locust, bur oak,	İ	İ
	common lilac,	common hackberry,	İ	İ
	Peking cotoneaster,	:	İ	i
	•	eastern redcedar,	i I	i
	peashrub, skunkbush	!	! 	i
	sumac, western	honeylocust,	! 	i
			I I	I I
	sandcherry	osageorange,	 	1
	!	ponderosa pine,	l	!
	!	Rocky Mountain	l	!
	!	juniper		!
25			1	
17:	1			
ona		Austrian pine, black	Siberian elm	
	common chokecherry,		<u> </u>	
	common lilac,	common hackberry,		
	Peking cotoneaster,	Douglas fir,		
	pinyon, Siberian	eastern redcedar,	l	
	peashrub, skunkbush	green ash,	1	
	sumac, western	honeylocust,		I
	sandcherry	osageorange,	]	I
	i	ponderosa pine,	İ	i
	i I	Rocky Mountain	i I	i
	İ	juniper	! 	i
	! !	l Juniper	! 	1
98:	! 	1 	1 	1
	American plum,	  Austrian pine, black	ı İsiberian elm	· 
, Olice			I	I I
	common chokecherry,	•	] 	1
	common lilac,	common hackberry,	] !	1
	Peking cotoneaster,		  -	!
	pinyon, Siberian	eastern redcedar,	  -	!
	peashrub, skunkbush			I
	sumac, western	honeylocust,		I
	sandcherry	osageorange,		
		ponderosa pine,		1
		Rocky Mountain		I
	1	juniper	]	I

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees hav	ring predicted 20-year	r average height, in	reet, of
and soil name	<8	8-15	16-25	26-35
	!		<u> </u>	ļ
199: Vona	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm                 	
200: Vona	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm                 	
Karval.				į
Midway.	l I		 	l I
201: Vona	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm               	
Midway, moist.  202:  Vona	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm               	

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol		. Ing producted 20 year	r average height, in feet, of			
and soil name	<8	8-15	16-25	26-35		
202: Seldom	    American plum,	    Blue spruce, common	    Siberian elm	    Plains cottonwood		
	common lilac, Nanking cherry, osageorange, Peking	ponderosa pine,				
203:				ļ		
Vonid	common chokecherry, common lilac, Peking cotoneaster,	common hackberry, Douglas fir, eastern redcedar,	Siberian eim	 		
204:	İ	İ	ĺ	i		
Vonid	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	Siberian elm			
205: Vonid	  American plum,	Austrian pine, black	  Siberian elm			
	common chokecherry, common lilac, Peking cotoneaster,	locust, bur oak,   common hackberry,   Douglas fir,   eastern redcedar,	  -  -  -  -  -  -			
206: Vonid	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm           			

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of-								
and soil name	<8	8-15	16-25	26-35					
206:  Karval.  Midway.  207:  Vonid	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	      Siberian elm       						
Midway.	 	juniper							
208: Vonid	American plum,   common chokecherry,   common lilac,   Peking cotoneaster,   pinyon, Siberian   peashrub, skunkbush   sumac, western   sandcherry	common hackberry, Douglas fir, eastern redcedar,	  Siberian elm           						
Seldom	common chokecherry,	ponderosa pine,	Siberian elm    -  -  -  -  -  -						
209: Wages	American plum,   common chokecherry,   common lilac,   fourwing saltbush,   Nanking cherry,   Peking cotoneaster,   Siberian peashrub,   skunkbush sumac,   western sandcherry	spruce, bur oak, common hackberry, eastern redcedar, green ash, osageorange, pinyon, ponderosa	Siberian elm						

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol		ving predicted 20-year	average neight, in	
and soil name	<8	8-15	16-25	26-35
	_	[	[	Į.
10:				
Wages	1	Austrian pine, black	Siberian elm	
	common chokecherry,			!
	common lilac,	spruce, bur oak,		
	fourwing saltbush,		<u> </u>	
	•	eastern redcedar,		1
	Peking cotoneaster,			1
	Siberian peashrub,	osageorange,		1
	skunkbush sumac,	pinyon, ponderosa		1
	western sandcherry	pine, Rocky		
		Mountain juniper,		
		Russian mulberry,		
		Scotch pine, white		
		fir		1
				I
1:				1
lages, dry	1	Austrian pine, black	Siberian elm	!
	common chokecherry,	•		Į.
	common lilac,	spruce, bur oak,		1
	fourwing saltbush,	common hackberry,		1
	Nanking cherry,	eastern redcedar,		1
	Peking cotoneaster,	green ash,		
	Siberian peashrub,	osageorange,		
	skunkbush sumac,	pinyon, ponderosa		
	western sandcherry	pine, Rocky		
		Mountain juniper,		
		Russian mulberry,	l	
		Scotch pine, white		
		fir		1
				I
2:				
lages	1	Austrian pine, black	Siberian elm	
	common chokecherry,		<u> </u>	
	common lilac,	spruce, bur oak,		
	fourwing saltbush,	common hackberry,		1
	Nanking cherry,	eastern redcedar,		
	Peking cotoneaster,	green ash,		
	Siberian peashrub,	osageorange,		
	skunkbush sumac,	pinyon, ponderosa		1
	western sandcherry	pine, Rocky		1
		Mountain juniper,		1
		Russian mulberry,		I
		Scotch pine, white		1
		fir		1
	!	!	<u> </u>	ļ.
arval.				1
2.		 	 	[ [
3: eld	Common chokecherry,	  Common hackberry	  Siberian elm	l I
	common lilac,	eastern redcedar,		
		•	 	I I
	fourwing saltbush,	•	] i	I I
		honeylocust,	] !	1
	Peking cotoneaster,		] !	1
	Siberian peashrub,	! = =	] !	1
	•	Rocky Mountain	] !	1
	western sandcherry		  -	I
	1	mulberry	I	I

Table 9.--Windbreaks and Environmental Plantings--Continued

Map symbol	Trees having predicted 20-year average height, in feet, of							
and soil name	<8	8-15	16-25	26-35				
14: Weld, dry	Common chokecherry, common lilac, fourwing saltbush, Nanking cherry, Peking cotoneaster, Siberian peashrub, skunkbush sumac, western sandcherry	eastern redcedar, green ash, honeylocust, osageorange, ponderosa pine, Rocky Mountain	  Siberian elm             					
15: Wiley	    Common lilac,	    Bur oak, eastern	    Siberian elm					
wiley	pinyon, Rocky   Mountain juniper,   Siberian peashrub,   silver   buffaloberry,   skunkbush sumac	redcedar, green ash, honeylocust,						
216: Wiley	    Common lilac,	  -  Bur oak, eastern	  Siberian elm	j				
niiey	pinyon, Rocky	redcedar, green ash, honeylocust,						
17: Wilid	Common lilac,	 	    Siberian elm					
M1114	pinyon, Rocky   Mountain juniper,   Siberian peashrub,   silver   buffaloberry,   skunkbush sumac	Bur oak, eastern   redcedar, green   ash, honeylocust,   ponderosa pine		           				
218:	İ	į	į					
Water.	 	 						
19: Gravel pits.	 	 	 	 				
20: Access denied.	 	 						

## Table 10a.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

and soil name	Pct. of map	i i		Picnic areas     		Playgrounds	
	unit   			   Rating class and   limiting features		Rating class and limiting features	Value
101: Apishapa, rarely ponded	     90       	Depth to saturated zone	        1.00    0.94   	saturated zone	        1.00    0.94   	saturated zone	      1.00    0.94    0.05
102: Arvada	   85       	Sodium content	    1.00  0.94   	!	    1.00  0.94   	  Very limited:   Sodium content   Restricted   permeability   Slope	  1.00  0.94    0.21
103: Ascalon	     85   	    Not limited 	     	    Not limited   	     	    Somewhat limited:   Slope	0.05
104: Ascalon	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	      0.48
105: Ascalon	     85 	    Not limited 	     	    Not limited 	     	    Very limited:   Slope	
106: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	
107: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	
108: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Very limited:   Slope	
109: Ascalon	     55 	    Not limited 	     	    Not limited   	     	    Somewhat limited:   Slope	      0.05
Haxtun	   30   	:	    0.28 	  Somewhat limited:   Too sandy 	    0.28 	  Somewhat limited:   Too sandy   Slope	  0.28  0.05
110: Ascalon, dry	     55 	    Not limited 	       	    Not limited 	       	    Somewhat limited:   Slope	
Haxtun, dry	1   30   	:	    0.28 	  Somewhat limited:   Too sandy 	    0.28 	  Somewhat limited:   Too sandy   Slope	  0.28  0.05

Table 10a.--Recreation--Continued

and soil name	Pct. of map	 		   Picnic areas   		   Playgrounds   	
	unit   		:	Rating class and   limiting features		Rating class and   limiting features	Value
111: Bacid	     85     	! -	      0.50  0.05	!	      0.50  0.05	  Somewhat limited:   Dusty   Restricted   permeability	      0.50  0.05
112: Bankard, occasionally flooded	       55     		          1.00  0.28	· -	          0.28   	      Somewhat limited:   Flooding   Too sandy   Slope	        0.60  0.28  0.05
Glenberg, occasionally flooded	       30   	    Very limited:   Flooding 	        1.00	    Not limited   	         	    Somewhat limited:   Flooding   Slope	      0.60  0.05
113: Bijou	     90   	  Somewhat limited:   Too sandy 	      0.28 	  Somewhat limited:   Too sandy 	      0.28 	  Somewhat limited:   Too sandy   Slope	    0.28  0.05
114: Bijou, moist	     90   	:	      0.28 	  Somewhat limited:   Too sandy	      0.28 	  Somewhat limited:   Too sandy   Slope	0.28
115: Bijou, moist	     90   	:	      0.28	  Somewhat limited:   Too sandy	      0.28	  Very limited:   Slope   Too sandy	1.00
116: Blakeland	     85   		      0.12 	  Somewhat limited:   Too sandy 	      0.12 	  Very limited:   Slope   Too sandy	      1.00  0.12
117: Bresser	     85 	    Not limited 	     	    Not limited 	     	  Somewhat limited:   Slope	0.21
118: Campo	   85       	Restricted permeability	      0.60    0.50	permeability	    0.60    0.50	  Somewhat limited:   Restricted   permeability   Dusty	    0.60    0.50
119: Canyon	   55         	Slope   Depth to bedrock   Dusty	1.00	Depth to bedrock Dusty	1.00	Gravel content	1.00  1.00  0.50
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	   

Table 10a.--Recreation--Continued

and soil name	Pct. of map	İ		   Picnic areas   		   Playgrounds   	
	unit   		:	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
120: Colby	     85   	•	      0.50 	    Somewhat limited:   Dusty 	      0.50 	    Somewhat limited:   Dusty   Slope	    0.50  0.05
121: Colby	     85   		      0.50	    Somewhat limited:   Dusty 	      0.50	  Very limited:   Slope   Dusty	    1.00  0.50
122: Colby	     50   	•	      0.50	    Somewhat limited:   Dusty 	      0.50	    Somewhat limited:   Dusty   Slope	      0.50  0.21
Weld	   40   	'	    0.50 	  Somewhat limited:   Dusty 	    0.50 	  Somewhat limited:   Dusty   Slope	  0.50  0.21
123: Firstview	   85         	Sodium content   Restricted   permeability	    1.00  0.39    0.28	Restricted permeability	    1.00  0.39    0.28	Restricted permeability	  1.00  0.39    0.28  0.05
124: Fort Collins	     90   		    0.50	  Somewhat limited:   Dusty	      0.50	  Somewhat limited:   Dusty   Slope	0.50
125: Fort Collins	     85   	'	      0.50	  Somewhat limited:   Dusty 	      0.50	  Somewhat limited:   Dusty   Slope	    0.50  0.48
126: Fort Collins	     55   		      0.50	  Somewhat limited:   Dusty 	      0.50	  Very limited:   Slope   Dusty	    1.00  0.50
Karval	   35     	Slope	    1.00  0.32		    1.00  0.32		  1.00  1.00
127: Fort Collins	     50 		    0.50	  Somewhat limited:   Dusty 	    0.50	  Somewhat limited:   Dusty   Slope	  0.50  0.21
Platner	   35   		    0.50 	  Somewhat limited:   Dusty 	    0.50 	  Somewhat limited:   Dusty   Slope	  0.50  0.21
128: Fort Collins	     50   	•	      0.50 	    Somewhat limited:   Dusty   	      0.50 	    Very limited:   Slope   Dusty 	    1.00  0.50

Table 10a.--Recreation--Continued

	  Pct.   of	       Camp areas 		   Picnic areas 		   Playgrounds 	
	map  unit	   		 		   	
	 		Value	Rating class and limiting features	•	Rating class and limiting features	Value
	İ	İ	İ	İ	İ	İ	i
128:			!				!
Razor, moist	40		1.00	Very limited:   Sodium content	  1.00	Very limited:   Slope	1.00
	l I	•	10.45	•	0.45	!	1.00
	i	permeability	i	permeability		Restricted	0.45
		Slope	0.16	Slope	0.16	permeability Depth to bedrock	10 42
		 				Begen to Bearour	
129: Fort	   85	  Somewhat limited:	 	  Somewhat limited:	 	  Somewhat limited:	 
	İ	Dusty	0.50	Dusty	0.50	Dusty	0.50
		!	0.05	!	0.05	Restricted	0.05
	 	permeability	 	permeability	 	permeability Slope	  0.05
		İ	į	<u>.</u>	į		
130: Fort	   85	  Somewhat limited:	 	  Somewhat limited:	 	  Somewhat limited:	 
	i	Dusty	0.50	Dusty	0.50	Dusty	0.50
			0.05		0.05		0.48
	 	permeability	 	permeability	 	Restricted permeability	0.05 
	İ	 	İ	İ			i
131: Fort	   55	Somewhat limited:	 	  Somewhat limited:	 	  Very limited:	 
	İ	!	0.50		0.50		1.00
		!	0.05	!	0.05	Dusty	0.50
	 	permeability 	 	permeability	 	Restricted permeability	0.05 
W1	 		į		į	,   	į
Karval	35 	Very limited:   Slope	  1.00	Very limited:   Slope	  1.00	Very limited:   Slope	1
			0.32		0.32	Gravel content	1.00
132:	 	 	 	 	 	 	 
Fort	50	Somewhat limited:	İ	Somewhat limited:	İ	Very limited:	į
		!	0.50	:	0.50		1.00
	 	Restricted permeability	0.05 	Restricted permeability	0.05 	Dusty Restricted	0.50  0.05
		permeability		permeability		permeability	
Razor	   40	  Very limited:	 	  Very limited:	 	  Very limited:	 
		Sodium content	1.00	Sodium content	1.00	Slope	1.00
		•	0.45		0.45	•	1.00
	l I	permeability Slope	  0.16	permeability Slope	  0.16	Restricted permeability	0.45 
						Depth to bedrock	0.42
133:	 	 	 	 	 	 	 
Haversid, rarely	İ	İ	İ	İ	İ	İ	İ
flooded	85	:		Somewhat limited:	:	Somewhat limited:	
	 	· -	1.00  0.50	Dusty	0.50 	Dusty Slope	0.50
	İ			İ	į		
134:							
Haverson, rarely flooded	l   85	  Very limited:	l I	  Somewhat limited:	I I	  Somewhat limited:	 
	 		1.00	•	0.50	•	0.50
	l	Dusty	0.50	Restricted	0.05	Restricted	0.05
		:	0.05	permeability		permeability	
	I I	permeability 	l I	 	 	Slope 	0.05 
		•		•		•	

Table 10a.--Recreation--Continued

and soil name	Pct. of map unit	 		Picnic areas		Playgrounds	
		Rating class and		Rating class and   limiting features	•	•	•
135: Haxtun	     85   	•	      0.28	    Somewhat limited:   Too sandy 	      0.28 	    Somewhat limited:   Too sandy   Slope	    0.28  0.05
136: Haxtun, dry	     85   	•	      0.28	  Somewhat limited:   Too sandy 	      0.28	  Somewhat limited:   Too sandy   Slope	    0.28  0.05
137: Haxtun, dry	     55   	•		    Somewhat limited:   Too sandy 	•	    Somewhat limited:   Too sandy   Slope	      0.28  0.05
Olney	   30 	•		  Somewhat limited:   Too sandy 	•	  Somewhat limited:   Too sandy   Slope	  0.28  0.05
138: Haxtun	     55   	•	      0.28	    Somewhat limited:   Too sandy 		    Somewhat limited:   Too sandy   Slope	      0.28  0.05
Olnest	   30 	•	    0.28 	  Somewhat limited:   Too sandy 		  Somewhat limited:   Too sandy   Slope	  0.28  0.05
139: Keith	     85   	•		•		    Somewhat limited:   Dusty   Slope	      0.50  0.05
140: Keith	     85   	•	      0.50	    Somewhat limited:   Dusty 	      0.50	    Very limited:   Slope   Dusty	    1.00  0.50
141: Kim		•		  Somewhat limited:   Dusty 		  Somewhat limited:   Dusty   Slope	    0.50  0.05
142: Kim	     90   	•	      0.50	  Somewhat limited:   Dusty 	      0.50	  Very limited:   Slope   Dusty	    1.00  0.50
143: Kimst	   90       	•	      0.50  0.05		•	  Somewhat limited:   Dusty   Restricted   permeability   Slope	    0.50  0.05    0.05
144: Kimst	   90       	  Somewhat limited:   Dusty   Restricted   permeability	      0.50  0.05		    0.50  0.05		    1.00  0.50  0.05

Table 10a.--Recreation--Continued

Map symbol and soil name	Pct. of map	-   		Picnic areas   		Playgrounds   	
	unit   		Value	Rating class and   limiting features	•	Rating class and   limiting features	Value
145: Las Animas, occasionally flooded	         85	        Very limited:   Flooding	          1.00	        Somewhat limited:   Depth to	          0.19	        Somewhat limited:   Flooding	          0.60
	     	Depth to   saturated zone   	0.44     	saturated zone     	     	Depth to saturated zone Slope	0.44    0.05
146: Limon, rarely flooded	     85	    Very limited:   Flooding	      1.00	    Somewhat limited:		    Somewhat limited:	
	       	Flooding   Too clayey   Restricted   permeability   Salinity	0.50  0.39    0.13		0.39    0.13	Too clayey Restricted permeability Salinity Slope	0.30  0.39    0.13  0.05
147: Limon, moist, rarely flooded		Flooding   Too clayey   Restricted	      1.00  0.50  0.39	Restricted permeability	0.50  0.39	Restricted permeability	0.50
148: Manzanola	         85 	permeability   Salinity          Somewhat limited:   Restricted   permeability	  0.13          0.05	Salinity        Somewhat limited:   Restricted   permeability	0.13            0.05	Salinity   Slope      Somewhat limited:   Slope   Restricted	0.13  0.05        0.21  0.05
149: Manzanst, rarely flooded	         90   	    -  Very limited:   Flooding   Restricted   permeability	        1.00  0.45	      Somewhat limited:   Restricted   permeability 	          0.45	permeability          Somewhat limited:   Restricted   permeability   Slope	        0.45    0.05
150: Manzanst	   85   	  Somewhat limited:   Restricted   permeability 	      0.05	  Somewhat limited:   Restricted   permeability	      0.05	  Somewhat limited:   Slope   Restricted   permeability	    0.21  0.05
151: Midway	   85       	  Very limited:   Depth to bedrock   Restricted   permeability				  Very limited:   Depth to bedrock   Restricted   permeability   Slope	    1.00  0.44    0.21
152: Midway, moist	   85     	  Very limited:   Depth to bedrock   Restricted   permeability			•	•	    1.00  0.44    0.21

Table 10a.--Recreation--Continued

and soil name	Pct. of map	-    -		   Picnic areas   		   Playgrounds   	
	unit   			Rating class and   limiting features		Rating class and   limiting features	Value
153: Midway	   55       	  Very limited:   Depth to bedrock   Restricted   permeability   Slope		  Very limited:   Depth to bedrock   Restricted   permeability   Slope		Slope	    1.00  1.00  0.44
Razor	   30         	Restricted permeability	  1.00  0.45    0.16	Restricted permeability	  1.00  0.45    0.16	Restricted	  1.00  1.00  0.45    0.42
154: Midway, moist	   55         	Depth to bedrock Restricted permeability	:	  Very limited:   Depth to bedrock   Restricted   permeability   Slope		Slope	  1.00  1.00  0.44
Razor, moist	30           	Restricted permeability	  1.00  0.45    0.16		  1.00  0.45    0.16	:	  1.00  1.00  0.45    0.42
155: Midway	   55         	Depth to bedrock	1.00	:	1.00	Slope	  1.00  1.00  0.44 
Rock outcrop 156: Midway, moist	 	      Very limited:	      1.00	:	        1.00	Slope	      1.00  1.00  0.44
Rock outcrop, moist- 157: Nunn	 	   	i I	  Not rated        Not limited	   	  Not rated        Somewhat limited:	       
158: Nunn	   	 	 	        Not limited	     	Slope      Somewhat limited:	0.48
Sampson, rarely flooded	     30 		      1.00	    Not limited   	       	    Somewhat limited:   Slope 	      0.05
159: Nunn, dry	     50 	  Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope 	      0.05

Table 10a.--Recreation--Continued

				I		I	
and soil name	Pct. of map	-   		   Picnic areas   		   Playgrounds   	
	unit		1770 1	   Rating class and	17701	Deting gloss and	1770 1
	l I	Rating Class and   limiting features	•	limiting features	varue	limiting features	varue
	 						<u> </u>
159: Sampson, dry, rarely flooded	•		        1.00	    Not limited   	       	    Somewhat limited:   Slope	
160: Olnest	     85   		      0.28	    Somewhat limited:   Too sandy 	      0.28	  Somewhat limited:   Too sandy   Slope	    0.28  0.21
161: Olnest	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope 	      0.05
162: Olnest	   85 	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Slope 	0.48
163: Olnest	   90 	'	      0.04	  Somewhat limited:   Slope 	      0.04	  Very limited:   Slope 	
164: Olney	   85   		    0.28 	  Somewhat limited:   Too sandy   	    0.28 	  Somewhat limited:   Too sandy   Slope	    0.28  0.21
165: Olney	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope 	    0.05
166: Olney	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope 	0.48
167: Olney	     90 	•	      0.04	!	      0.04	  Very limited:   Slope 	    1.00
168: Olney	   55   	  Not limited 	     	  Not limited   	     	  Very limited:   Slope 	    1.00
Midway	   30       	Depth to bedrock					  1.00  1.00  0.44
169: Otero	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope 	0.21
170: Oterodry	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope 	0.21
171: Oterodry	   85 	  Not limited   	     	    Not limited   	     	  Very limited:   Slope 	    1.00

Table 10a.--Recreation--Continued

and soil name	Pct. of map	-   		   Picnic areas   		   Playgrounds   	
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	Value
172: Platner	     85   	!	      0.50	    Somewhat limited:   Dusty 	      0.50	    Somewhat limited:   Dusty   Slope	      0.50  0.05
173: Platner	     50   	    Somewhat limited:   Dusty 	      0.50	    Somewhat limited:   Dusty 	      0.50	    Somewhat limited:   Dusty   Slope	      0.50  0.05
Ascalon	   35 	  Not limited 	   	  Not limited 	   	  Somewhat limited:   Slope	    0.05
174: Pleasant, rarely ponded	       90   	Depth to saturated zone	        1.00    0.50	    Very limited:   Depth to   saturated zone   Dusty	        1.00    0.50	    Very limited:   Depth to   saturated zone   Dusty	        1.00    0.50
175: Rago, rarely flooded	     90     		      1.00  0.05	    Somewhat limited:   Restricted   permeability 	      0.05   	    Somewhat limited:   Restricted   permeability 	      0.05   
176: Rago, dry, rarely flooded	       90     	    Very limited:   Flooding   Restricted   permeability	      1.00  0.05	!	        0.05	      Somewhat limited:   Restricted   permeability 	        0.05
177: Razor	   85           	  Very limited:   Sodium content   Restricted   permeability 	    1.00  0.45   		    1.00  0.45   	!	    1.00  0.45    0.42  0.21
178: Razor, moist	   85           	Sodium content	  1.00  0.45   		  1.00  0.45   	:	  1.00  0.45    0.42  0.21
179: Sampson, rarely flooded	     90 		        1.00	      Not limited   	       	      Not limited   	       
180: Sampson, dry, rarely flooded			        1.00	    Not limited 	       	    Not limited 	       

Table 10a.--Recreation--Continued

and soil name	Pct. of map	-    -		   Picnic areas   		   Playgrounds   	
	unit   	·		   Rating class and   limiting features		   Rating class and   limiting features	Value
181: Satanta	     90   	•	      0.50 	    Somewhat limited:   Dusty 	      0.50 	    Somewhat limited:   Dusty   Slope	      0.50  0.05
182: Satanta, dry	     90 	•	      0.50	  Somewhat limited:   Dusty 	      0.50	  Somewhat limited:   Dusty   Slope	    0.50  0.05
183: Seldom, rarely flooded	     85     	Flooding	        1.00  1.00		        1.00   	  -  Very limited:   Depth to   saturated zone   Slope	      1.00    0.05
184: Shingle	   55       	  Very limited:   Depth to bedrock   Restricted   permeability				  Very limited:   Depth to bedrock   Slope   Restricted   permeability	  1.00  0.77  0.05
Midway	   30         	  Very limited:   Depth to bedrock   Restricted   permeability 				  Very limited:   Depth to bedrock   Slope   Restricted   permeability	  1.00  0.77  0.44
185: Shingle, moist	   55       	Depth to bedrock	:				    1.00  0.77  0.05
Midway, moist	   30       	Depth to bedrock		•	1.00	•	  1.00  0.77  0.44
186: Sundance	     85   	:	      0.12 	  Somewhat limited:   Too sandy 	      0.12	  Somewhat limited:   Too sandy   Slope	      0.12  0.05
187: Table Mountain, rarely flooded	       85 		        1.00	      Not limited   	       	      Not limited   	       
188: Travessilla	   60     	•	1.00	•	1.00	•	1.00
Rock outcrop	   25 	  Not rated 	   	    Not rated 	   	    Not rated 	     

Table 10a.--Recreation--Continued

		 I		 I		 I	
and soil name	  Pct.   of  map	_		Picnic areas		Playgrounds   	
	unit	:				<u> </u>	
	 	Rating class and limiting features	:	Rating class and   limiting features		Rating class and limiting features	•
189: Truckton	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	      0.21
190: Truckton	     85   	    Not limited   	       	    Not limited   	       	    Very limited:   Slope 	      1.00
191: Truckton, dry	   85 	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Slope 	    0.21
192: Truckton, dry	   85 	  Not limited   	     	  Not limited   	     	  Very limited:   Slope 	    1.00
193: Valent	85     	Too sandy	    1.00  0.63		    1.00  0.63		    1.00  1.00
194: Valent	     55   		      1.00	  Very limited:   Too sandy 	      1.00	  Very limited:   Too sandy   Slope	  1.00  1.00
Bijou	   30   		    0.28 	  Somewhat limited:   Too sandy 	    0.28 	  Very limited:   Slope   Too sandy	  1.00  0.28
195: Valent	     60 	Too sandy	      1.00  0.96		      1.00  0.96		    1.00  1.00
Vona	   30   	Too sandy	    0.28  0.04	-	    0.28  0.04		    1.00  0.28
196: Valent	     55 	Too sandy	    1.00  0.96	•		  Very limited:   Too sandy   Slope	    1.00  1.00
Vonid	   35   	Too sandy	    0.28  0.04		    0.28  0.04		  1.00  0.28
197: Vona	     85   	  Somewhat limited:   Too sandy 	      0.28 	  Somewhat limited:   Too sandy 	      0.28 	  -  Somewhat limited:   Slope   Too sandy	    0.77  0.28
198: Vona	   85 	  Not limited   	     	    Not limited   	     	    Somewhat limited:   Slope 	    0.21
199: Vona	   85 	  Somewhat limited:   Slope	    0.04 	  Somewhat limited:   Slope	    0.04 	  Very limited:   Slope 	    1.00

Table 10a.--Recreation--Continued

	Pct. of	<u> </u>		Picnic areas		Playgrounds	
	map	:		<u> </u>		<u> </u>	
	unit		1	l	1		1
	 	Rating class and   limiting features		Rating class and   limiting features		Rating class and   limiting features	Value
	 				i		1
200: Vona	   35 	  Not limited 	 	  Not limited 	 	  Very limited:   Slope	    1.00
Karval	   30   	Slope	    1.00  0.32		    1.00  0.32	!	    1.00  1.00
Midway, moist	   20         	Slope   Depth to bedrock	1.00	Slope   Depth to bedrock	1.00	Depth to bedrock	  1.00  1.00  0.44 
201:	İ		i	<u> </u>	i	İ	i
Vona	55   	Not limited   	 	Not limited   		Very limited:   Slope 	  1.00
Midway, moist	   30         	Depth to bedrock	:	Very limited:   Depth to bedrock   Restricted   permeability	:	:	  1.00  1.00  0.44
202:	İ	İ	İ	İ	İ	İ	İ
Vona	60	Somewhat limited:	:	Somewhat limited:	:	Very limited:	
	 	Slope 	0.96 	Slope 	0.96 	Slope 	1.00
Seldom	   20     	Depth to saturated zone	  1.00    0.96	Depth to saturated zone	:	   Very limited:   Depth to   saturated zone   Slope	  1.00    1.00
203:	 	 	i i	 	i	 	
Vonid	   85     	!	    0.28 	Somewhat limited:   Too sandy 	  0.28 	Somewhat limited:   Slope   Too sandy	0.77
204: Vonid	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	0.21
205: Vonid	     85 	'	      0.04	    Somewhat limited:   Slope 	      0.04	    Very limited:   Slope 	      1.00
206: Vonid	   35 	  Not limited 	 	  Not limited 	 	  Very limited:   Slope	1 1.00
Karval	l   30	  Very limited:	I I	  Very limited:	I I	  Very limited:	1
-			1.00	:	1.00	•	1.00
	ļ	:	:	:	0.32	Gravel content	1.00
Midway	   20 	Slope	1.00	Slope	1.00		
	l I		1.00  0.44	Depth to bedrock Restricted	1.00  0.44		1.00
		permeability		permeability		permeability	
		İ	Ī	İ	İ	İ	ĺ

Table 10a.--Recreation--Continued

and soil name	  Pct.   of  map	į		   Picnic areas   		   Playgrounds   	
	unit   		Value	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
207: Vonid	     55 	    Not limited 	     	    Not limited 	   	    Very limited:   Slope	
Midway	   30         	   Very limited:   Depth to bedrock   Restricted   permeability 			•	   Very limited:   Depth to bedrock   Slope   Restricted   permeability	  1.00  1.00  0.44 
208:	i	İ	i	İ	į	İ	i
Vonid	65 	Somewhat limited:   Slope	  0.96	Somewhat limited:   Slope	  0.96	Very limited:   Slope	  1.00
Seldom	   20     	Depth to saturated zone	    1.00    0.96	saturated zone	    1.00    0.96	  Very limited:   Depth to   saturated zone   Slope	  1.00    1.00
209: Wages	     85   	  Somewhat limited:   Dusty 	      0.50 	  Somewhat limited:   Dusty 	      0.50 	  Somewhat limited:   Dusty   Slope	    0.50  0.48
210: Wages	     85   	· -	      0.50  0.04	:	    0.50  0.04	  Very limited:   Slope   Dusty	    1.00  0.50
211: Wages, dry	     85   	:	      0.50	    Somewhat limited:   Dusty 	      0.50	    Somewhat limited:   Dusty   Slope	      0.50  0.21
212: Wages	   60 	! -	    0.50  0.37		    0.50  0.37	  Very limited:   Slope   Dusty	    1.00  0.50
Karval	   25     		0.37		0.37	!	  1.00  1.00
213: Weld	   85   	•	      0.50	  Somewhat limited:   Dusty 	      0.50	  Somewhat limited:   Dusty 	    0.50
214: Weld, dry	   85   	•	    0.50 	  Somewhat limited:   Dusty 	    0.50	  Somewhat limited:   Dusty 	    0.50
215: Wiley	   85     	•	    0.50 	  Somewhat limited:   Dusty 	    0.50 	  Somewhat limited:   Dusty   Slope	  0.50  0.05
216: Wiley	   85     	:	      0.50 	  Somewhat limited:   Dusty 	      0.50 	  Very limited:   Slope   Dusty 	    1.00  0.50

Table 10a.--Recreation--Continued

Map symbol	Pct.	Camp areas		Picnic areas		Playgrounds	
and soil name	of	ĺ		İ			
	map						
	unit	l		<u> </u>			
		Rating class and	Value	Rating class and	Value	Rating class and	Value
		limiting features		limiting features		limiting features	
217:							1
Wilid	85	Somewhat limited:		Somewhat limited:		Somewhat limited:	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.05
218:							1
Water	90	Not rated	1	Not rated		Not rated	
	!		ļ		!		ļ
219:			!		!		!
Gravel pits	100	Not rated	!	Not rated	!	Not rated	!
	!		ļ		!		ļ
220:	1	I	I	I	l		I
Access denied	100	Not rated		Not rated		Not rated	

## Table 10b.--Recreation

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

and soil name	Pct. of map	 	s	Off-road motorcycle trai	Off-road motorcycle trails		
	unit   			   Rating class and   limiting features			•
101: Apishapa, rarely ponded	       90   		:	    Very limited:   Depth to   saturated zone		    Very limited:   Depth to   saturated zone	        1.00
102: Arvada	     85 	    Not limited 	     	    Not limited 	     	  Very limited:   Sodium content	
103: Ascalon	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
104: Ascalon	   85	  Not limited	 	  Not limited	 	  Not limited	
105: Ascalon	     85	    Not limited		    Not limited		    Not limited	 
106: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
107: Ascalon, dry	     85	    Not limited	 	    Not limited	 	    Not limited	 
108: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
109: Ascalon	   55	    Not limited	i I	    Not limited		  Not limited	İ
Haxtun	   30 	:	:	  Somewhat limited:   Too sandy	0.28	  Not limited 	   
110: Ascalon, dry	     55	    Not limited	   	    Not limited	   	    Not limited	   
Haxtun, dry	   30 	!	    0.28	  Somewhat limited:   Too sandy	    0.28	  Not limited 	   
111: Bacid	     85 	•	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited	     
112: Bankard, occasionally flooded	         55 	•	          0.28	        Somewhat limited:   Too sandy 	          0.28	      Somewhat limited:   Droughty   Flooding	          0.90
Glenberg, occasionally flooded	       30 	    Not limited 	       	    Not limited 	       	    Somewhat limited:   Flooding	        0.60

Table 10b.--Recreation--Continued

and soil name	Pct. of	 	s	   Off-road   motorcycle trai	ls	   Golf fairways   	
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	
113: Bijou	     90   	'	      0.28	    Somewhat limited:   Too sandy 	      0.28	    Not limited   	       
114: Bijou, moist	   90 	:	      0.28	  Somewhat limited:   Too sandy	    0.28	  Not limited 	     
115: Bijou, moist	     90 	:	      0.28	    Somewhat limited:   Too sandy	      0.28	  Not limited 	     
116: Blakeland	     85   	!	      0.12	    Somewhat limited:   Too sandy	      0.12	  Somewhat limited:   Droughty	      0.69
117: Bresser	     85   	    Not limited   	     	    Not limited   	     	  Somewhat limited:   Droughty	      0.10
118: Campo	     85   	!	      0.50	    Somewhat limited:   Dusty 	      0.50	    Not limited   	!       
119: Canyon	   55           	Slope	    1.00  0.50     		  0.56  0.50     	Depth to bedrock Slope Content of large stones	1.00
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	   
120: Colby	   85   	•	      0.50	  Somewhat limited:   Dusty	    0.50	  Not limited   	     
121: Colby	   85   	•	      0.50	  Somewhat limited:   Dusty	    0.50	  Not limited 	     
122: Colby	     50 	:	      0.50	  Somewhat limited:   Dusty	    0.50	    Not limited 	     
Weld	40	•		  Somewhat limited:   Dusty	0.50	  Not limited 	
123: Firstview	     85   	•		    Somewhat limited:   Too sandy 	•	    Very limited:   Sodium content 	      1.00
124: Fort Collins	     90   	•		    Somewhat limited:   Dusty 	      0.50	    Not limited   	       
125: Fort Collins	   85 	:	      0.50	  Somewhat limited:   Dusty 	      0.50	  Not limited 	       

Table 10b.--Recreation--Continued

	  Pct.   of	•	s	   Off-road   motorcycle trai	ls	   Golf fairways 	
	map	:		!		!	
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	
126: Fort Collins	     55 	:	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited 	     
Karval	   35       	:	    0.18   	  Not limited     	         	  Very limited:   Droughty   Slope   Gravel content	  1.00  1.00  0.32
127: Fort Collins	     50 	:	:	  Somewhat limited:   Dusty	      0.50	    Not limited 	     
Platner	   35 			  Somewhat limited:   Dusty	    0.50	  Not limited 	   
128: Fort Collins	     50 		      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited   	     
Razor, moist	   40       	  Not limited     	       	  Not limited       	         	  Very limited:   Sodium content   Depth to bedrock   Slope 	  1.00  0.42  0.16
129: Fort	   85   	:	:	  Somewhat limited:   Dusty 	      0.50	  Not limited   	     
130: Fort	     85   	:	:	    Somewhat limited:   Dusty 	      0.50	    Not limited   	     
131: Fort	     55   	:	:	    Somewhat limited:   Dusty 	    0.50	    Not limited   	     
Karval	   35     	•	  0.18   	Not limited 	       	Very limited:   Droughty   Slope   Gravel content	  1.00  1.00  0.32
132: Fort	     50 	'	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited   	     
Razor	   40     	Not limited 	       	  Not limited     	       	  Very limited:   Sodium content   Depth to bedrock   Slope	  1.00  0.42  0.16
133: Haversid, rarely flooded	       85 	!	        0.50	    Somewhat limited:   Dusty 	        0.50	      Not limited   	         
134: Haverson, rarely flooded	     85 	•	      0.50	    Somewhat limited:   Dusty 	      0.50	    Not limited   	       

Table 10b.--Recreation--Continued

and soil name	  Pct.   of  map	ĺ	s	   Off-road   motorcycle trai 	ls	   Golf fairways   			
	unit   			   Rating class and   limiting features		•	•		
135: Haxtun	     85 			    Somewhat limited:   Too sandy		    Not limited   			
136: Haxtum, dry				    Somewhat limited:   Too sandy			     		
137: Haxtun, dry				  Somewhat limited:   Too sandy			 		
Olney	   30 	  Somewhat limited:   Too sandy		•	    0.28	:	     		
138: Haxtun	     55 	    Somewhat limited:   Too sandy		•	:	:	     		
Olnest	   30 	•		  Somewhat limited:   Too sandy		  Not limited 	   		
139: Keith	     85 	:	:	    Somewhat limited:   Dusty	      0.50	:	     		
140: Keith	     85 	:	:	    Somewhat limited:   Dusty	      0.50	:	     		
141: Kim	     90 	:	:	    Somewhat limited:   Dusty	      0.50	:			
142: Kim	     90 	    Somewhat limited:   Dusty		    Somewhat limited:   Dusty	      0.50	    Not limited   	     		
143: Kimst	     90 	•	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited 			
144: Kimst	     90 	'	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited 			
145: Las Animas, occasionally flooded	       85   	      Not limited   	           	      Not limited   	             	      Somewhat limited:   Flooding   Depth to   saturated zone	          0.60  0.19		
146: Limon, rarely flooded	       85   		        0.50	    Somewhat limited:   Too clayey 	        0.50	    Very limited:   Too clayey   Salinity	      1.00  0.13		

Table 10b.--Recreation--Continued

and soil name	Pct. of map	į	s	   Off-road   motorcycle trai 	ls	Golf fairways		
	unit     	i		   Rating class and   limiting features	•	 		
147: Limon, moist, rarely flooded		      Somewhat limited:	   	      Somewhat limited:		      Very limited:   Too clayey		
148: Manzanola	       85	      Not limited	     	      Not limited	     	Salinity      Not limited	0.13	
149: Manzanst, rarely flooded	       90	      Not limited	     	      Not limited	     	      Not limited	     	
150: Manzanst	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     	
151: Midway	     85   	  Not limited   	       	  Not limited   	 	  Very limited:   Depth to bedrock   Droughty	    1.00  0.92	
152: Midway, moist	     85   	  Not limited   	       	  Not limited   	       	  Very limited:   Depth to bedrock   Droughty	    1.00  0.92	
153: Midway	     55   	  Not limited   	       	  Not limited   	     	  Very limited:   Depth to bedrock   Droughty	0.92	
Razor	     30   	  Not limited   	         	    Not limited   	       	Slope    Very limited:   Sodium content   Depth to bedrock   Slope	0.16      1.00  0.42  0.16	
154: Midway, moist	     55     	  Not limited     	         	  Not limited     	         	  Very limited:   Depth to bedrock   Droughty   Slope	    1.00  0.92  0.16	
Razor, moist	   30     	  Not limited     	       	  Not limited     	       	  Very limited:   Sodium content   Depth to bedrock   Slope	  1.00  0.42  0.16	
155: Midway	     55     	•	      0.92 	    Not limited     	         	  Very limited:   Depth to bedrock   Slope   Droughty	    1.00  1.00  0.92	
Rock outcrop	   30 	  Not rated 	   	  Not rated 	   	  Not rated 	   	
156: Midway, moist	   55       	•	    0.92     	  Not limited     	       	  Very limited:   Depth to bedrock   Slope   Droughty	  1.00  1.00  0.92	

Table 10b.--Recreation--Continued

and soil name	Pct. of map	 	5	Off-road   motorcycle trai	ls	   Golf fairways 	
	   			Rating class and limiting features		Rating class and limiting features	
156: Rock outcrop, moist-	     30	    Not rated 	     	    Not rated 	     	    Not rated 	     
157: Nunn	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
158: Nunn	   55 	    Not limited 	     	  Not limited 	   	    Not limited 	     
Sampson, rarely flooded	   30 	  Not limited 	   	  Not limited 	   	  Not limited 	   
159: Nunn, dry	   50 	  Not limited 	   	  Not limited 	   	  Not limited 	   
Sampson, dry, rarely flooded		  Not limited 	   	  Not limited 	   	  Not limited 	   
160: Olnest	   85   	!	    0.28 	  Somewhat limited:   Too sandy 	    0.28 	  Not limited   	     
161: Olnest	,     85 	    Not limited 	     	    Not limited 	;     	    Not limited 	;     
162: Olnest	   85 	  Not limited 	   	  Not limited 	   	    Not limited 	   
163: Olnest	     90 	  Not limited 	     	  Not limited 	   	  Somewhat limited:   Slope	    0.04
164: Olney	     85   	:	      0.28 	    Somewhat limited:   Too sandy 	      0.28	    Not limited   	       
165: Olney	   85 	  Not limited 	     	  Not limited 	   	  Not limited 	   
166: Olney	   85 	  Not limited 	   	  Not limited 	     	  Not limited 	   
167: Olney	   90   	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Slope 	    0.04
168: Olney	     55	    Not limited	   	    Not limited 	;     	    Not limited	     
Midway	   30   	  Not limited   	       	  Not limited   	     	  Very limited:   Depth to bedrock   Droughty	  1.00  0.92
169: Otero	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
170: Oterodry	   85 	    Not limited 	     	  Not limited 	     	  Not limited 	     
171: Oterodry	   85 	    Not limited 	   	    Not limited 	     	  Not limited	     

Table 10b.--Recreation--Continued

and soil name	Pct. of map	 	s	Off-road   motorcycle trai	ls	   Golf fairways   	
	unit 	   Rating class and	Value	Rating class and	Value	Rating class and	Value
	<u> </u>	limiting features	<u> </u>	limiting features	<u> </u>	limiting features	<u> </u>
172: Platner	     85 	:	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited 	     
173: Platner	     50 	:	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited   	     
Ascalon	35	  Not limited		Not limited		Not limited	ļ
174: Pleasant, rarely ponded	     90     	Depth to saturated zone	1.00	saturated zone	        1.00    0.50	saturated zone	        1.00   
175: Rago, rarely flooded	     90 	    Not limited 	     	    Not limited 	     	    Not limited 	     
176: Rago, dry, rarely flooded	       90	      Not limited 	       	      Not limited 	       	      Not limited 	       
177: Razor	     85   	  Not limited   	     	  Not limited   	     	  Very limited:   Sodium content   Depth to bedrock	    1.00  0.42
178: Razor, moist	     85   	    Not limited 	         	    Not limited   	         	    Very limited:	      1.00
179: Sampson, rarely flooded 180:	       90 	      Not limited 	         	      Not limited 	         	      Not limited   	       
Sampson, dry, rarely flooded	:	  Not limited 	   	  Not limited 	   	  Not limited 	   
181: Satanta	     90 	!	    0.50	  Somewhat limited:   Dusty	    0.50	  Not limited  Not limited	     
182: Satanta, dry	     90 	•	      0.50	    Somewhat limited:   Dusty 	      0.50	    Not limited   	     
183: Seldom, rarely flooded	     85   		        1.00	  -  Very limited:   Depth to   saturated zone 	        1.00	  -  Very limited:   Depth to   saturated zone	        1.00
184: Shingle	   55     	  Not limited   	 	  Not limited     	 	  Very limited:   Depth to bedrock   Droughty	    1.00  0.71

Table 10b.--Recreation--Continued

and soil name	  Pct.   of  map		s	Off-road   motorcycle trai 	ls	   Golf fairways   	
	unit   			   Rating class and   limiting features	•	   Rating class and   limiting features	Value
185: Midway	     30 	    Not limited   	       	    Not limited   	       	    Very limited:   Depth to bedrock   Droughty	      1.00  0.92
185: Shingle, moist	     55   	    Not limited   	       	    Not limited   	       	    Very limited:   Depth to bedrock   Droughty	      1.00  0.71
Midway, moist	   30 	  Not limited   	     	  Not limited   	     	  Very limited:   Depth to bedrock   Droughty	    1.00  0.92
186: Sundance	     85   	'	      0.12 	    Somewhat limited:   Too sandy 	      0.12	    Not limited   	       
187: Table Mountain, rarely flooded	       85 	    Not limited 	;       	    Not limited 	     	    Not limited 	     
188: Travessilla	   60       		    1.00     	  Somewhat limited:   Slope     	    0.56     	  Very limited:   Droughty   Depth to bedrock   Slope   Content of large   stones	1.00
Rock outcrop	   25 	  Not rated 	   	  Not rated 	   	  Not rated 	   
189: Truckton	   85   	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Droughty	    0.21
190: Truckton	     85 	  Not limited	     	    Not limited 	     	  Somewhat limited:   Droughty	0.21
191: Truckton, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Droughty	
192: Truckton, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Droughty	      0.21
193: Valent	     85   		      1.00 	  Very limited:   Too sandy 	:	Slope	    0.69  0.63  0.50
194: Valent	     55 		      1.00	    Very limited:   Too sandy 	•	:	      0.69  0.50
Bijou	   30 		    0.28 	  Somewhat limited:   Too sandy 	    0.28 	  Not limited   	     

Table 10b.--Recreation--Continued

Map symbol	  Pct.	Paths and trail	s	Off-road		   Golf fairways	:		
	of	:	_	motorcycle trai	ls	į			
	map  unit	•				 			
	   	•		Rating class and   limiting features	•	Rating class and	:		
195:	 	 	 	1	 	 	 		
Valent	   60     		  1.00   	Very limited:   Too sandy 	  1.00   	Somewhat limited:   Slope   Droughty   Too sandy	  0.96  0.69  0.50		
Vona	   30   	:	    0.28	  Somewhat limited:   Too sandy 	    0.28 	  Somewhat limited:   Slope	    0.04 		
196: Valent	   55     		    1.00	  Very limited:   Too sandy 	    1.00 	  Somewhat limited:   Slope   Droughty   Too sandy	  0.96  0.69		
Vonid	     35   	:	    0.28	  Somewhat limited:   Too sandy 	    0.28	  Somewhat limited:	    0.04		
197: Vona	   85   	:	    0.28	  Somewhat limited:   Too sandy 	    0.28	  Not limited   	     		
198: Vona	   85 	    Not limited 	   	    Not limited 	     	    Not limited 	     		
199: Vona	   85 	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Slope	0.04		
200: Vona	   35	    Not limited	     	    Not limited		    Not limited	   		
Karval	   30     	:	  0.18   	  Not limited   	     	   Very limited:   Droughty   Slope   Gravel content	  1.00  1.00  0.32		
Midway, moist	   20       	•	    0.18     	  Not limited       	       	  Very limited:   Depth to bedrock   Slope   Droughty	  1.00  1.00  0.92		
201: Vona	     55	    Not limited 	     	    Not limited	     	    Not limited 	   		
Midway, moist	   30     	  Not limited   	!       	  Not limited   	     	  Very limited:   Depth to bedrock   Droughty	  1.00  0.92		
202: Vona	     60 	    Not limited 	     	    Not limited 	     	  Somewhat limited:   Slope	0.96		
Seldom	   20     		    1.00   	  Very limited:   Depth to   saturated zone	    1.00   	  Very limited:   Depth to   saturated zone   Slope	  1.00    0.96		
203: Vonid	     85 	•	      0.28	    Somewhat limited:   Too sandy 	      0.28	    Not limited   	     		

Table 10b.--Recreation--Continued

	Pct. of map	 	5	Off-road   motorcycle trai 	ls	   Golf fairways   	
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	•
204: Vonid	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
205: Vonid	     85 	    Not limited 	       	    Not limited 	     	  Somewhat limited:   Slope	0.04
206: Vonid	     35	    Not limited	   	    Not limited	   	    Not limited	
Karval	   30     		    0.18   	  Not limited     	       	  Very limited:   Droughty   Slope   Gravel content	  1.00  1.00  0.32
Midway	   20       		    0.18   	  Not limited     	         	Very limited:   Depth to bedrock   Slope   Droughty	i I
207: Vonid	     55	    Not limited	   	    Not limited	   	    Not limited	
Midway	   30     	  Not limited   	       	  Not limited     	       	  Very limited:   Depth to bedrock   Droughty	    1.00  0.92
208: Vonid	     65 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	      0.96
Seldom	   20     		    1.00   	  Very limited:   Depth to   saturated zone	    1.00   	  Very limited:   Depth to   saturated zone   Slope	    1.00    0.96
209: Wages	     85 	'	      0.50	    Somewhat limited:   Dusty	      0.50	    Not limited 	     
210: Wages	     85 		      0.50	    Somewhat limited:   Dusty	      0.50	    Somewhat limited:   Slope	0.04
211: Wages, dry	     85   	•	      0.50	    Somewhat limited:   Dusty 	      0.50	    Not limited   	     
212: Wages	     60 	'	      0.50	  Somewhat limited:   Dusty	      0.50	  Somewhat limited:   Slope	0.37
Karval	   25       	  Not limited     	           	  Not limited       	         	  Very limited:   Droughty   Slope   Gravel content	  1.00  0.37  0.32
213: Weld	     85   		      0.50	  Somewhat limited:   Dusty 	      0.50 	    Not limited   	       

Table 10b.--Recreation--Continued

Map symbol	Pct.	Paths and trail	.s	Off-road		Golf fairways	5
and soil name	of			motorcycle trai	ls		
	map						
	unit						
		Rating class and	Value	Rating class and	Value	Rating class and	Value
		limiting features		limiting features		limiting features	
214:					!		
Weld, dry	85		•	'		Not limited	
		Dusty	0.50	Dusty	0.50	  -	
215:		 	!	 	!	 	
215: Wiley	   0E	  comowhat limited:		  Somewhat limited:	!	  Not limited	
wiley	00	Dusty	1  0.50		10.50	NOC IIMICEG	
	 	Dusty 	10.50	Dusty 	10.30	 	I I
216:		 	i	 	i	 	i
Wiley	85	Somewhat limited:	i	Somewhat limited:	i	Not limited	i
-	i	Dusty	0.50	Dusty	0.50		i
	i	İ	i	İ	i	İ	i
217:	ĺ		Ì		İ		ĺ
Wilid	85	Somewhat limited:		Somewhat limited:		Not limited	
		Dusty	0.50	Dusty	0.50		
218:							
Water	90	Not rated		Not rated	!	Not rated	
		  -	!	  -	!	  -	
219:			!		!		
Gravel pits	1	Not rated	1	Not rated	1	Not rated	I
220:	1	] 	1	] 		] 	I
Access denied	1100	Not rated		  Not rated		  Not rated	
Access delited	1-00	INOC TACEG	1	I Taced	1	I Taced	!

Table 11.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

		1	Potentia	al for	habitat	element	ts		Poten	tial as	habitat	for-
Map symbol	Grain		Wild						Open-	Wood-	Wetland	Range
and soil name	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	land
	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	wild-
	crops	legumes	plants	trees	plants			areas	life	life		life
									l			l
101:												
Apishapa	Poor	Poor	Poor				Fair	Fair	Poor		Fair	Fair
											[	
102:		!	!		!					!	!	
Arvada		: -	Poor				Poor	Very	Very		: -	Fair
	poor	poor	!	!	!	!		poor	poor	!	poor	ļ
100		!			!	!				!		!
103:	   <del>                                   </del>	 	   == -:	 	1	 	   D =	 	   <del>                                   </del>			   a a
Ascalon	rair	Fair	Fair					Very	Fair			Good
	l	1	 	 	1	 	l I	poor	l I	1	poor	1
104:	l	1	 	 	1	 	  -	 	l I	1	 	1
Ascalon	l Doin	  Fair	  Fair	 	1	 	  Poor		  Fair	1		  Good
ASCATON	rair	learr	Lair				POOL	Very	rair		: -	l Good
	l I	1	 	 	1	 	l I	poor	l I		poor	 
105:	l I	i i	I I	I I	İ	l I	I I	I I	I I	i I	I I	I I
Ascalon	Poor	  Fair	  Fair		i	i	  Very	  Very	  Fair	i	  Very	  Good
incuron	1		I	! 	i	:		poor		i	poor	I
	l I	i	i i	i	i	i	1	1	l I	i		i
106:	l I	i	! 	! 	i	i	! 	! 	i i	i	! 	i
Ascalon	Fair	Fair	  Fair		i	i	Poor	Very	  Fair	i	Very	Good
		i		i	i	i	i	poor		i	poor	i
	İ	i	i I	İ	i	i	i I		i I	i		i
107:	İ	i	i I	İ	i	i	i I	i I	i I	i	i	i
Ascalon	Fair	Fair	  Fair		i		Poor	Very	Fair	i	Very	l Good
		i		i	i	i	i	poor		i	poor	i
	i	i	i	i	i	i	İ	i -	i	i	i -	i
108:	İ	i	i	i	i	i	İ	i	İ	i	i	i
Ascalon	Poor	Fair	Fair	i	i	i	Very	Very	Fair	i	Very	Good
	İ	İ	İ	İ	İ	İ	poor	poor	İ	İ	poor	İ
		İ	ĺ	ĺ	İ	ĺ	ĺ	ĺ	ĺ	İ	ĺ	ĺ
109:												
Ascalon	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Haxtun	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
110:												
Ascalon	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Haxtun	Poor	Fair	Fair						Fair		Very	Good
		!	!	!	!	!		poor		!	poor	!
		!	ļ	ļ	1	ļ	ļ	ļ	l	I	ļ	
111:	l  -	I .	l ·	l	1	l	  -	 	l ·	I		
Bacid	Poor	Fair	Fair	ļ			:		Fair		: -	Good
		1			1		 	poor	l	I	poor	
110.	l I	1	l I	l I	I	l I	 	 	l I	I	I I	l I
112:	   Des	  Dec:-	l Indi	l I	I	l I	   170 mr -	   170 mr -	   Bed	I	1370.00	 
Bankard	POOT	Poor	Fair						Fair	•		Good
	l I	1	I I	I I	I	l I	poor	poor	l I	I I	poor	l I
Clarbors	l Poi-	l Izai-	l Izai-	I I -	1	l I –	l Door	   170mr-	l I⊽oi	I I -	1	الاممع
Glenberg	rair	Fair	Fair				:	:	Fair		: -	Good
	! !	1	I I	I I	1	I I	I I	poor	l I	1	poor	I I
113:	l I	I I	I I	I I	1	l I	I I	I I	l I	I I	I I	I I
Bijou	l Poc∽	l I⊽ai∽	l I⊽ai∽	l I	I I	l I	I I Poo∽	l Nerr	l I⊽ai∽	I I	lver	  Good
D1 J04	FOOL	Fair	Fair 					Very   poor	Fair 		Very   poor	l GOOG

Table 11.--Wildlife Habitat--Continued

Map exploid		 	1	Potenti	al for	habitat	elemen	ts		Poten	tial as	habitat	for-		
	Map symbol	Grain	1	Wild	I	I	I			Open-	Wood-	Wetland	Range-		
114:	and soil name	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	land		
114:		seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	wild-		
Bifou		crops	legumes	plants	trees	plants			areas	life	life	L	life		
Bifou															
115:															
115:	Bijou	Fair	Fair	Fair				Poor	Very	Fair		Very	Good		
Bijou   Poor   Fair   Fair   Pair       Poor   Very   Fair     Very   Ocod   Poor									poor			poor			
Bijou   Poor   Fair   Fair   Pair       Poor   Very   Fair     Very   Ocod   Poor					l										
116:					!										
116:	Bijou	Poor	Fair	Fair				Poor	Very	Fair			Good		
Blakeland		!	!	ļ	!	ļ.	ļ	ļ	poor	ļ	!	poor	!		
Blakeland		!	1	!	!		!						!		
117:		l Boom	Pair	l Doin	 	l 	! !	17022	17027	l IPoin	 	170277	l Cood		
117:	Biakeland	l FOOT	rair	raii 	 		 			Fair			l Good		
Bresser		I I	1	l I	i I	i i	I I	l boor	l boor	i i	I I	l boor	I I		
Bresser	117:	i	i	i İ	i I	i	i	i i	i i	i	i	i I	i		
118:		Poor	Fair	  Fair		i		Poor	Verv	Fair	i	Verv	Good		
118:   Campo		i	i	i	i	i	i	i		i	i		i		
Campo		i	i	İ	i	i	i	i	i -	i	i	i -	i		
119:	118:	ĺ	İ	ĺ	ĺ	İ	ĺ	ĺ	ĺ	İ	ĺ	ĺ	ĺ		
119: Canyon	Campo	Poor	Good	Fair				Poor	Very	Fair		Very	Good		
Canyon									poor			poor			
Canyon															
Rock outcrop   Very   Poor   Po															
Rock outcrop   Very   Poor	Canyon	Poor	Poor	Fair			Fair		: -	Poor			Fair		
DOOR   DOOR		!	!		!	ļ	ļ	poor	poor	!		poor			
DOOR   DOOR	D1			 									 		
120:   Colby			:	:				: -	: -		: -	: -	: -		
Colby		poor	120:	! !	i	l I	l I	i	! !	 	 	i	 	 	! !
121:		  Fair	Fair	  Fair		i		l Poor	  Verv	  Fair	i	  Verv	l Good		
121:	•	i	i		i	i	i	İ		i	i		i		
Colby		i	i	İ	į	i	i	i İ	i -	i	i	i	i		
122:	121:														
122:	Colby	Poor	Fair	Fair				Very	Very	Fair		Very	Good		
Colby								poor	poor			poor			
Colby															
Weld		ļ 	!	ļ 	!	ļ.	ļ	ļ	ļ	ļ .	!	!			
Weld	Colby	Fair	Fair	Fair				•		Fair		: -	Good		
		 	1	 	 	1	 	 	poor	1	 	poor	1		
	Wold	  Poin	Pair	  Poin	l I	l 	 	  Door		  Poin	 	170277	l Cood		
123: Firstview	werd	raii	rair	raii 	 		 	l FOOT	:	Fair			l Good		
Firstview		i	i	i	<u> </u>	i	i	! 	1001	i	i	1001	i		
124:	123:	i	i	İ	i	i	i	i	i	i	i	i	i		
Fort Collins Fair   Fair   Fair       Poor   Very   Fair     Very   Good	Firstview	i	i	Poor	i	i	i	Poor	i	Poor	i	i	Fair		
Fort Collins Fair   Fair   Fair       Poor   Very   Fair     Very   Good		İ	124:	ĺ	İ	ĺ	ĺ	İ	ĺ	ĺ	ĺ	İ	ĺ	ĺ	ĺ
125:	Fort Collins	Fair	Fair	Fair				Poor	Very	Fair		Very	Good		
Fort Collins   Poor									poor			poor			
Fort Collins   Poor															
		!			!	!	!		!			!	!		
	Fort Collins	Poor	Fair	Fair				:		Fair		:	Good		
Fort Collins   Poor   Fair   Fair       Poor   Very   Fair     Very   Good		!	1	!	!		!		poor			poor	!		
Fort Collins   Poor   Fair   Fair       Poor   Very   Fair     Very   Good	126.	 	1	  -	 	1	 	 	 	1	 	 	1		
		l Poor	  Fair	l  Fai∽	ı I <b>-</b>	! ! <b>-</b>	! ! <b>-</b>	l Poor	l Verv	l  Fair	 	l Verv	l LGOCA		
Karval	-OLC COLLINS	, - 50 <i>-</i>	1.011	1	, 	, 	, 	:	: -	1-4	 	:	, 5564 		
		i	i	i	i	i	i	i		i	i		i		
	Karval	Poor	Fair	Fair	i	i	i	Very	Very	Fair	i	Very	Good		
		i	i	i İ	i	i	:	:	:	i	:	: -	i		
Fort Collins   Poor   Fair   Fair       Poor   Very   Fair     Very   Good		İ	127:	I	1	l	I	I	I	l	l	I		I	I
	Fort Collins	Poor	Fair	Fair				Poor	Very	Fair		Very	Good		
		l		l	l		l		poor			poor	I		
		l		l	l		l					I	I		

Table 11.--Wildlife Habitat--Continued

			Potent:	al for	habitat	elemo-			l Boto-	+isl ~~	habitat	for
Map symbol	  Grain		Wild	ar ror	I	eremen	l I				Wetland	
	:	•	•	  Bard-	  Conif-	  ahmuha	  Wo+land	•		•	•	
	and	Grasses	•		:	•	•	•		•	•	land
	seed	•	ceous		erous	•	plants	:		wild-	liiie	wild-
	crops	legumes	prants	trees	prants	L	L	areas	life	life	L	life
	ļ	!	ļ :	!	!	!	ļ	ļ	!	!	ļ	!
127:	ļ	1		!	!	!	ļ	ļ		!	ļ	!
Platner	Poor	Fair	Fair				•	Very	Fair		Very	Good
								poor			poor	
128:												
Fort Collins	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Razor	Poor	Poor	Fair				Very	Very	Fair		Very	Good
							poor	poor			poor	
129:												
Fort	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
				I					I			
130:				I					I			
Fort	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	i	İ	İ	İ	İ	İ	İ	poor	İ	İ	poor	İ
	i	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
131:	İ	i	i	i	İ	i	i	i	i	i	i	i
Fort	Poor	Fair	Fair	i	i	i	Poor	Very	Fair	i	Very	Good
	i	i	i	i	i	i	:	poor	i	i	poor	i
	i	i	i	i	i	i	i		i	i		i
Karval	Poor	Fair	Fair		i		  Very	Very	  Fair	i	Very	  Good
			 	i	i	i i	: -	poor	 	i	poor	1
	i	1	i	i	i		1		i	i	1	i
132:	<u> </u>		<u>'</u>	<u> </u>	<u> </u>	! !	! 	! 	<u> </u>	i	! 	!
Fort	l Poor	Fair	  Fair			' 	Poor	  Very	  Fair		  Very	  Good
1010	1			<u> </u>	<u> </u>	! !	1	poor		i	poor	1
	! !		! !	! !	<u> </u>	l I	! 	1001	! !	<u> </u>	POOL	l I
Razor	l Door	Poor	  Fair	' 		! !	  Very	  Very	  Fair		  Very	  Good
III III III III III III III III III II	1	1	1	i i	i i	l I	: -	poor	I	! !	poor	ı
	l I	I I	l I	! !	I I	l I	l boor	l boor	! !	I I	l boor	l I
133:	! !		! !	! !	i	l I	! 	! 	! !	<u> </u>	! 	l I
Haversid	l Izain	Poor	  Fair	! !		  Fair	  Poor	  Very	  Fair	l 	  Very	  Fair
naverbiu	Fall	1	raii	I	I	Fall	:	: -	Fall	I	: -	l arr
	 	1	 	 		 	 	poor	 	1	poor	 
134:	 		 	 		 	 	 	 	 	 	 
Haverson	   ==	1	  Fair	1	1	 	   D = ===	 	   <del>                                   </del>	 	 	   a a
naverson	rair	Fair	Lair				:	Very	Fair		Very	Good
				!				poor	!		poor	
1.25				!					!			
135:	l 	<u> </u>	l 	!	!	!			 			
Haxtun	Fair	Fair	Fair	!			Poor	Very	Fair			Good
	ļ	!	ļ :	!	!	!	ļ	poor	!	!	poor	!
	!	!	!	!	!	!	<u> </u>	!	!	!	!	!
136:				!					!			
Haxtun	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	l			l				poor	l		poor	l
137:	l			l					l			l
Haxtun	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Olney	Poor	Fair	Fair				Very	Very	Fair		Very	Good
	l						poor	poor			poor	
138:	l		l			l	l	l			l	l
Haxtun	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
	l		l	I		l	l	poor	I		poor	I
	I		I	I	I	I	I	I	I	I	I	I
Olnest	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
	I	1	l	I		I	:	poor	I		poor	I
	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ

Table 11.--Wildlife Habitat--Continued

				al for	habitat	elemen	ts				habitat	
	Grain		Wild		1			•		•	Wetland	
and soil name	and	Grasses	•	•	:	•	•	•		•	wild-	land
	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	wild
	crops	legumes	plants	trees	plants	<u> </u>	<u> </u>	areas	life	life		life
L39:												
Keith	Fair	Good	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
140:												
Keith	Fair	Fair	Fair				Very	Very	Fair		Very	Good
							poor	poor			poor	
		!								!		!
141:		!	ļ 	ļ	!	ļ .	ļ	ļ		!		! .
Kim	Poor	Poor	Fair			Fair	Very	Very	Poor		Very	Fair
		!	ļ	ļ	!	!	poor	poor		!	poor	!
		!	!		!	!	ļ	ļ		!		!
142:			l ·	!	!	 				!		!
Kim	Poor	Poor	Fair			Fair	Very	: -	Poor		Very	Fair
		1	!	!	!	!	poor	poor		!	poor	
142	l i	1	 	l i		 	 	 	l i	!		
143: Kimst	  Fair	  Boim	l I Endon	l I	1	 	  Poor		  Fair	1		ا
KIMSt	rair	Fair	Fair				POOL	Very   poor	rair		Very	Good
		1	 	 		 	 	l boot		!	poor	!
144:	l I	1	l I	l I	1	l I	l I	l I	l I	!	I I	!
	  Poor	  Fair	  Fair	! !	¦	! !	  Very	  Very	  Fair	¦	  Very	Good
KIMSC	1	I	l rair	l	I	I	poor	poor	raii		poor	I
	l I	1	l I	l I	 	I I	l boor	l boor	l I		l boor	
145:		i	l I	l I	i	l I	 	 		1	 	i
Las Animas	l Poor	  Fair	  Good	' 		  Fair	  Good	Poor	  Fair	i	  Fair	Fair
nab minab	1	1	I	! 	i	I	l I	1		i	1	I
146:		i	i	i I	i	! 	! 	! 		i	i	i
Limon	Poor	Poor	Poor	i	i		Poor	Very	Poor	i	Very	Fair
			 	İ	i	İ	 	poor		i	poor	i
	i	i	İ	i	i	i	i		i	i		i
147:	İ	i	i	İ	İ	i	i	i	İ	i	i	i
Limon	Poor	Poor	Poor				Poor	Very	Poor	j	Very	Fair
		İ	ĺ	ĺ	ĺ	ĺ	ĺ	poor		İ	poor	ĺ
148:												
Manzanola	Poor	Poor	Fair			Fair	Poor	Very	Poor		Very	Fair
								poor			poor	
			l									
149:												
Manzanst	Fair	Fair	Fair			Fair	Poor	Very	Fair		Very	Fair
								poor			poor	
150:												
Manzanst	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
		!						poor		!	poor	!
		!	!		!	!				!		!
151:		!		!						!		ļ .
Midway			Fair	!	!	:	: -	: -	Poor	!	Very	Fair
	poor	poor	!	!			poor	poor		!	poor	!
150.		1	 	l	I	l	l	l		1	1	1
152:	1770		   Be * -	l I	I	 	 	 	   De	1		 
Midway		: -	Fair			:		: -	Poor		Very	Fair
	poor	poor	l I	l I	I I	 	poor	poor	l I	1	poor	1
152.	l I	I	l I	l I	I I	l I	I I	I I	l I	I	I	1
153:	l Verr	  Verv	l I⊽ai∽	I I	l 	l I <b>-</b>	l Nerr	l Nerr	l I Poc∽	I I	  Verr	l Ipoi⊷
Midway	_	: -	Fair			:	: -	: -	Poor		Very	Fair
	poor	poor	l I	l I	I I	I I	poor	poor	l I	I	poor	1
Danam	   Des	  Dee	   Bed	l I	I I	 	   170 mm -	   170 mm -	   Bod	1		10
Razor	Poor	Poor	Fair			!	:	: -	Fair	!	Very	Good
		1					poor	poor			poor	

Table 11.--Wildlife Habitat--Continued

	1		Dobo-t'	-1 <i>E</i> '	habi +- ·	-1			l Dat-	-i-7 -	hab!+-:	for:
Non sumbol				al for .	habitat '	elemen	i				habitat	
	Grain		Wild		  a:e	   abb	   **-+33	•		Wood-	Wetland	
and soil name	and	Grasses	:	:	:	•	•	•	:	land	:	land
	seed	•			erous		plants			wild-	life	wild-
	crops	legumes	plants	trees	plants			areas	life	life		life
154:												
Midway	Very	Very	Fair				Very	Very	Poor		Very	Fair
	poor	poor					poor	poor			poor	
	I	1	I	1	1	ĺ	İ	İ	I	1		1
Razor	Poor	Poor	Fair				Very	Very	Fair		Very	Good
	İ	İ	İ	İ	ĺ	ĺ	poor	poor	İ	İ	poor	İ
	i	i	i	i	i	İ	İ	İ	i	i	i	i
155:	i	i	i	i	i	i	İ	İ	i	i	i	i
Midway	Verv	Very	Fair	i	i	i	Very	Very	Poor	i	Very	Fair
	poor	poor	 	i	i	! 	poor	poor	 	i	poor	 
	l boor	l boot	 	1		l I	l boor	l boor		!	l boor	
_ , .	 	1	 	1	1	 	 	 	 	1	 	 
Rock outcrop	: -	Very	Very	: -	Very	: -			Very	Very	Very	Very
	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor
156:												
Midway	Very	Very	Fair				Very	Very	Poor		Very	Fair
	poor	poor	i	i	i	İ	poor	poor	i	i	poor	i
	1	1	i	i	i	i I	• · · ·	• · · ·	i	i		i
Rock outcrop	  Verv	Very	  Very	  Very	Very	  Very	  Very	  Very	  Very	Very	  Very	  Very
ROCK OUCCIOP	: -		: -		: -	: -			poor	: -		poor
	poor	poor	poor	poor	poor	poor	poor	poor	l boor	poor	poor	l boor
	!	!	!	!	!				!	!		
157:				!	!					!	!	!
Nunn	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
158:												
Nunn	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
	i	i	i	i	i	İ	İ	poor	i	i	poor	i
	i	i	i	i	i	İ	i I		i	i		i
Sampson	l  Fair	Fair	  Fair	i	i		Poor	  Very	  Fair		  Very	  Good
Sampson	Fall	Fall	raii				I FOOT		raii			GOOG
	!	1		1	!	  -	 	poor	!	!	poor	1
	!	!	!	!	!				!	!	!	!
159:	!	!	!						!			
Nunn	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
	I	1	I	1	1	ĺ	İ	İ	I	1		
Sampson	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
_	i	i	i	i	i	i İ	i İ	poor	i	i	poor	i
	i	i	i	i	i	l I	! 		i	i	2	i
160:	1	1	! !	1		l I	l İ	l İ	1		I I	i i
	l ! •	1 .	l ! •	1	!	  -	  -	 	l ! ·	!	 	l
Olnest	Fair	Fair	Fair				Poor		Fair		Very	Good
	l		l					poor	l		poor	
161:												
Olnest	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
	İ	İ	İ	İ	ĺ	ĺ	ĺ	poor	İ	İ	poor	İ
	i	i	i	i	i	i	i	i	i	i	i	i
162:	i	i	i	i	i	! 	! 	! 	i	i	i	i
Olnest	l Izain	  Fair	  Fair	1		l I	  Poor	   170	  Fair	i	1770	  Good
Officest	rair	Lair	lrair						lrair		Very	Good
	!	!	!	!	!			poor	!	!	poor	!
	!	!	!	!	!		ļ	ļ	!	!	!	!
163:												
Olnest	Poor	Fair	Fair				Very	Very	Fair		Very	Good
		I					poor	poor			poor	
	I	1	I						I	1		
164:	I	I	I	I	I	I	l	l	I	I	I	I
Olney	Poor	Fair	  Fair				Very	Very	  Fair	i	  Very	Good
-	, <u>-</u>	i	i	i	i		:	poor	<u>-</u>	i	poor	
	İ	i	İ	i	i	i I			İ			i
	I I	1	I I	1	1	l I	l I	l I	I I	1	1	
165.		1	I	1	I .	I	I	I	I	I	I	I
	l Dec	l made:	l made	1	i .	I	177	77	Trade-	i	177-0	10003
165: Olney	Poor	Fair	Fair		ļ	:	:		Fair		Very	Good
165: Olney	  Poor	Fair	Fair	 		:	:	Very   poor	Fair 		Very   poor	Good

Table 11.--Wildlife Habitat--Continued

	l		Potenti	al for	habitat	elemen	ts		Poten	tial as	habitat	for-
Map symbol	Grain		Wild						Open-	Wood-	Wetland	Range-
and soil name	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	land
	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	wild-
	crops	legumes	plants	trees	plants			areas	life	life		life
	I	1	I	I	I	I	I	I		I	I	I
166:	İ	İ	İ	İ	ĺ	ĺ	ĺ	İ	İ	İ	İ	İ
Olney	Poor	Fair	Fair				Very	Very	Fair	i	Very	Good
	İ	i	İ	İ	İ	İ	poor	poor	i	İ	poor	İ
167:	İ	i	İ	İ	İ	İ	İ	İ	i	İ	İ	İ
Olney	Poor	Fair	Fair	i			Very	Very	Fair	i	Very	Good
	İ	İ	İ	İ	ĺ	ĺ	poor	poor	İ	İ	poor	ĺ
	İ	i	İ	İ	İ	İ	İ	İ	i	İ	İ	İ
168:	İ	i	İ	İ	İ	İ	İ	İ	i	İ	İ	İ
Olney	Poor	Fair	Fair	i			Very	Very	Fair	i	Very	Good
	İ	i	İ	İ	İ	İ	poor	poor	i	İ	poor	İ
	İ	ĺ	ĺ	İ	ĺ	ĺ	ĺ	İ	İ	İ	İ	ĺ
Midway	Very	Very	Fair				Very	Very	Poor	i	Very	Fair
	poor	poor	İ	İ	İ	İ	poor	poor	i	i	poor	İ
	İ	i	İ	İ	İ	İ	İ	İ	i	İ	İ	İ
169:	İ	i	İ	İ	İ	İ	İ	İ	i	İ	İ	İ
Otero	Fair	Fair	Fair	i			Poor	Very	Fair	i	Very	Good
	i	i	i	i	İ	İ	i	poor	i	i	poor	i
	i	i	i	i	i	İ	i	i -	i	i	i -	i
170:	i	i	i	i	i	İ	i	i	i	i	i	i
Oterodry	Poor	Poor	Fair	i	i	Fair	Poor	Very	Fair	i	Very	Fair
-	i	i	i	i	i	İ	i	poor	i	i	poor	i
171:	i	i	i	i	i	İ	i	i -	i	i	i -	i
Oterodry	Poor	Poor	Fair	i	i	Fair	Poor	Very	Fair	i	Very	Fair
•	i	i	i	i	i			poor	i	i	poor	i
	i	i	i	i	i	i	i		i	i		i
172:	i	i	i	i	i	i	i	i	i	i	i	i
Platner	Fair	Fair	Fair		i		Poor	Very	Fair	i	Very	Good
	i	i	i	i	i	İ		poor	i	i	poor	İ
	i	i	i	i	i	i I	i i		i	i		i
173:	i	i	i	i	i	i I	i i	i	i	i	i	i
Platner	  Fair	Fair	  Fair		i		Poor	  Very	  Fair	i	Very	Good
1 1401101				i	i	l I	1	poor		i	poor	1
	i	i	i	i	i	l I	! 	1	i	i	1	i
Ascalon	  Fair	Fair	  Fair		i		Poor	  Very	  Fair	i	Very	  Good
1100011				i	i	l I	1	poor	1	i	poor	1
	i	i	i	i	i	l I	! !	1	i	i		i I
174:	i	i	i	i	i	l I	! !	i	i	i	i	i I
Pleasant	l Poor	Fair	  Fair			' 	Poor	Poor	  Fair	i	Poor	  Good
1100000110	1			i	i	l I	1	1	1	i	1	1
175:	i	i	i	i	i	l I	! !	i	i	i	i	i I
Rago	  Fair	Fair	  Good			' 	Poor	  Very	  Fair	i	  Very	  Good
1.030			1	<u> </u>	<u> </u>	 	1	poor	1	i	poor	1
	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	 	! 	1	i	i	1	i
176:	i	i	i	i	i	l I	! !	i	i	i	i	i I
Rago	l Poor	Fair	  Fair	' 		! !	  Poor	  Very	  Fair	i	Very	  Good
Mago	1	1	1	! !		l I	1	poor	1	<u> </u>	poor	1
	! !	<u> </u>	! !	! !		l I	! 	1	i	<u> </u>	1	! !
177:	! !	<u> </u>	! !	! !		l I	! 	i i	i	<u> </u>		! !
Razor	l Poor	Poor	  Fair	' 		! !	  Very	  Very	  Fair	i	  Very	  Good
Nazor	1	1	1	! !		l I	:	poor	1	<u> </u>	poor	1
	! !	<u> </u>	! !	! !		l I	POOL	1	i	<u> </u>	1	! !
178:	 	i	I I	! !	I I	l I	I I	I I	I I	1	i i	I I
Razor	l Door	l Door	  Fair	! !	 	l I	1 770227	170~~	l Poir	i	IVorus	  Good
AG201	l EOOE	Poor	l Leare				:	Very	Fair	i	! -	l GOOG
	I I	1	I I	I I	1	l I	poor	poor	1		poor	! !
179:	I I	1	I I	I I	1	l I	I I	! !	1		1	! !
	l  poi∽	l  pai∽	l  pai∽	I I =-	I I	I I	I I Poc∽	   170~~~	l  poi⊷	I I	170~~	  Good
Sampson	l Larr	Fair	Fair				•	Very	Fair		! -	l Good
	I I	I	I I	I I	I I	l I	I I	poor	I I	I	poor	I I
190.	I I	1	I I	I I	I I	l I	l I	I	I	1	1	I
180:	l I Boom	l IPai-	l Izai	I I -	I I -	l I -	l I Door	1702-	l Izai	I I .	1702-	الاصحع
Sampson	l FOOT	Fair	Fair					Very	Fair		: -	Good
	I I	I	I I	I I	I I	l I	I I	poor	I I	I	poor	I I
	I	I	ı	I	I	ı	I	I	I	I	I	I

Table 11.--Wildlife Habitat--Continued

	I		Potenti	al for	habitat	elemen	ts		Poten	tial ac	habitat	for-
Man symbol	Grain		Wild	I	I	I	l				Wetland	
	and	  Grasses	•	l   Ward-	  Corif	  Ghruba	  Wetland	   ghallo			•	kange-  land
		:	:	:	:	:	:	:	:		:	
	seed	•	ceous		erous	•	plants	:	:	wild-	life	wild-
	crops	legumes	plants	trees	plants			areas	life	life		life
181:	 		 	 	 	 	 	 	 	 	 	 
Satanta	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
	i	i	i	i	i	i	İ	poor	i	i	poor	i
	i	i	i	i	i	i	i	i	i	i	i	i
182:	i	i	i	i	i	i	i	i	i	i	i	i
Satanta	Poor	Fair	Fair	i	i	i	Poor	Very	Fair	i	Very	Good
	i	i	i	i	i	i		poor	i	i	poor	i
	i	i	! !	i		i	! 	1	! !	i		i
183:	! !	1	 	1	 	1	l I	! !	! !	1	 	1
Seldom	l I⊞ada	  Good	  Good	1		1	  Fair	  Fair	  Good	1	  Fair	  Good
Serdom	rair	GOOG	l Good				Lair	Lair	Good		rair	GOOG
	!	!	!	!	!	!	!	!	!	!		!
184:		!							!			
Shingle	Poor	Poor	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Midway	Very	Very	Fair				Very	Very	Poor		Very	Fair
	poor	poor	ĺ	İ	ĺ	İ	poor	poor	İ	İ	poor	İ
	i	i -	i	i	i	i	i -	i	i	i	i	i
185:	i	i	i	i	i	i	i	i	i	i	i	i
Shingle	Poor	Poor	Fair	i	i	i	Poor	Very	  Fair	i	Very	Good
Diffigic	1	1	1	i	i i	i	1	poor	I	i	poor	1
	 		! !	1		1	 	l boor	! !	1	l boor	1
	 	1	l ! •	1		1	 	 	  -	1	 	l .
Midway		Very	Fair				•	Very	Poor		Very	Fair
	poor	poor	ļ	ļ.	!	!	poor	poor	!	!	poor	!
	l								l			
186:												
Sundance	Poor	Fair	Fair			Fair	Very	Very	Fair		Very	Fair
							poor	poor			poor	
	I	1	I		1	I	1	I	I	1		I
187:	İ	i	İ	i	İ	i	İ	İ	İ	i	į	i
Table Mountain	Fair	Fair	Fair	i	i	i	Poor	Very	Fair	i	Very	Good
	i	i		i	i	i		poor	i	i	poor	i
	i	i	<u>'</u>	i	<u> </u>	i	! 		<u> </u>	i		i
188:	i i	1	! !	i	i i	i	l I	i I	i i	i	 	i
Travessilla	l Ivorre	  Very	  Poor	i		 	  Very	  Very	  Very		  Very	  Fair
Iravessilia	: -		POOL				•	:				learn
	poor	poor	!	!	!	!	poor	poor	poor	!	poor	!
	!	!	ļ	ļ.	!	!	ļ	!	!	!	!	!
Rock outcrop		Very	Very	Very	Very	: -	Very	Very	Very	Very	Very	Very
	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor
189:												
Truckton	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	I	1	I		1	I	I	poor	I	1	poor	I
	İ	i	İ	i	İ	i	İ	İ	İ	i	į	i
190:	i	i	i	i	i	i	i	i	i	i	i	i
Truckton	Poor	Fair	Fair	i	i	i	Poor	Very	Fair	i	Very	Good
	 		 	i	i	i	:	poor	 	i	poor	
	! !	1	 	1	 	1	l I	l boor	! !	1	I POOL	1
191:	1	1	 	1	!	1	 	! !	1	1	1	1
	  -	I .	l ! •	1	!	1	  -	 	l ! ·	1	 	l
Truckton	Poor	Fair	Fair				:	Very	Fair		Very	Good
	l		l					poor	l		poor	
	l								l			
192:												
Truckton	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	l		l	1		1		poor	I	1	poor	1
	I		l	1		1	l	I	I	1		1
193:	İ	i	İ	İ	İ	i	İ	İ	İ	İ	İ	i
Valent	Poor	Poor	Fair	i	i	Fair	Very	Very	Poor	i	Very	Fair
<del></del>	, <u>.</u>		, I	i	i	:	:	poor	, 	i	poor	, I
	i I	i	l I	i I	1	i	l boot	2001	i I	i I	2001	i
104.	I I	1	l I	I I	1	I I	I I	I I	I I	I I	I I	I I
194:	   D	l In	   m = 4	I		   m = 4	 	 	   D	I	 	   m = 4
Valent	Poor	Poor	Fair			:	:	Very	Poor		Very	Fair
	ļ .	!	!	Į.	!	!	poor	poor	!	Į.	poor	!
	I	1	l	I	I	I	l	I	I	I		I

Table 11.--Wildlife Habitat--Continued

I		]	Potentia	al for	habitat	element	s		Poten	tial as	habitat	for-
Map symbol	Grain		Wild	 I	1		<u> </u>	1			Wetland	
		Grasses	•	  Hard-	Conif-	Shrubs	Wetland	•				land
	seed	:	ceous	:	erous	•	plants		wild-	'	:	wild-
		legumes	•	•		•		areas	life			life
			i	İ	Ī	İ			i	i	İ	i
194:		i	İ	İ	i	i		İ	i	i	i	i
Bijou	Poor	Fair	Fair	i	i	i	Poor	Very	Fair	i	Very	Good
j		i	İ	İ	i	i		poor	i	i	poor	i
		İ	i	i	i	i		İ	i	i	i	i
195:		İ	İ	İ	İ	İ		İ	İ	İ	İ	İ
Valent	Poor	Poor	Fair			Fair	Very	Very	Poor		Very	Fair
				l			poor	poor	I		poor	
Vona	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
196:												
Valent	Poor	Poor	Fair			Fair	Very	Very	Poor		Very	Fair
				l			poor	poor			poor	
Vonid	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
197:		ļ .	l 	!	ļ.	!			ļ 	!	!	
Vona	Poor	Fair	Fair	!	!	!	Poor	Very	Fair	!	Very	Good
			!	!	ļ	!		poor	!	!	poor	
100				!					!	!		
198:			l ·					  -	l ! ·	!		
Vona	rair	Good	Fair				Poor	Poor	Fair		Very	Good
		 	l I	 	1	 		 	 	1	poor	l I
199:		 	 	 	 	 		l I	 		 	 
Vona	Poor	  Fair	  Fair	! !	! 	! !	  Poor	  Very	  Fair	¦	  Very	  Good
VOIIA	1001	I	l arr	l	I	I	1	poor	Fall		poor	l Good
		 	l I	l I	i i	I I		l boor	I I		l boor	I I
200:		i	i	i	i	! 		l İ	i	i	i I	i
Vona	Poor	Fair	Fair		i		Poor	  Very	  Fair	i	  Very	Good
		i		i	i	i		poor	i	i	poor	İ
		i	i	i	i	i		i	i	i	i -	i
Karval	Poor	Fair	Fair	i	i	i	Very	Very	Fair	i	Very	Good
		İ	i	i	i	i	poor	poor	i	i	poor	i
		İ	i	i	i	i		İ	i	i	i	i
Midway	Very	Very	Fair		i	i	Very	Very	Poor	j	Very	Fair
j	poor	poor	ĺ	ĺ	ĺ	ĺ	poor	poor	ĺ	ĺ	poor	ĺ
201:			l	l								
Vona	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Midway	Very	Very	Fair				Very	Very	Poor		Very	Fair
	poor	poor					poor	poor			poor	
		!	!	!	ļ.	!			!	!	!	
202:		! .	l 	!	ļ.	!			ļ 	!	!	
Vona	Poor	Fair	Fair	ļ		!	Poor	Very	Fair	!	Very	Good
			!	!				poor	!	!	poor	
G-14	<b>D</b>	l mada	   a 3	 	1	 		l i	   <del>                                   </del>	!		   a 3
Seldom	roor	Fair	Good 	ı		ı	ı ı	ı	Fair			Good
203:		1	I I	I I	1	I I		I I	I I	I I	I I	I I
203: Vonid	Doc	  Fair	  Fair	I I _	I I -	I I _	  Poor	   170227-	  Fair	 	1	  Good
AOIII II	FOOL	Leart	l.arr.	,				Very	l Leart		Very	l good
		I I	I I	I I	1	I I		poor	I I	I I	poor	I I
204:		I I	I I	I I	1	I I		I I	I I	I I	I I	I I
Vonid	Poor	  Fair	  Fair	   <b></b> -	   ===	   <b></b> -	  Poor	  Very	  Fair	 	  Very	  Good
	- 001	1-0	1-0				- 001	1.017	1-0-1		1 101 1	1 3000
101111		1	I	I	1	I		poor	I	1	poor	I

Table 11.--Wildlife Habitat--Continued

		]	Potenti	al for 1	habitat	elemen	ts		Poten	tial as	habitat	for-
Map symbol	Grain		Wild	 I			l	l			Wetland	
and soil name	and	Grasses	•	  Hard-	Conif-	  Shrubs	Wetland	•		land	•	land
	seed	:	ceous	:	erous		plants	•	wild-		:	wild-
		legumes	•		•		 	areas	life	life	1110	life
		1	l	1	I	i	l		i	i	i	i
205:	i	i	i	i	i	i	i i	i i	i	i	i	i
Vonid	Poor	Fair	Fair		i	i	Poor	Very	Fair	i	Very	Good
	i	i		i	i	i	İ	poor	i	i	poor	i
	i	i	i	i	i	i	i	i -	i	i	i -	i
206:	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Vonid	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
Karval	Poor	Fair	Fair				Very	Very	Fair		Very	Good
							poor	poor			poor	
	!	!		!	!	!			!	!		
Midway		: -	Fair				Very	: -	Poor		Very	Fair
	poor	poor	ļ	!	ļ.	ļ	poor	poor	ļ	!	poor	
	!	!	!	!	ļ	ļ	ļ	ļ	!	!		
207:	   D = ===	 	   <del>                                   </del>				   Do		   To do:	!		
Vonid	Poor	Fair	Fair				Poor	: -	Fair		Very	Good
	 	1	l I	 	1	1	 	poor	1	1	poor	l I
Midway	lverv	  Very	  Fair	 		! !	  Very	  Very	  Poor	!	  Very	  Fair
MIGWAY	poor	poor	l rair	I	I	I	poor	poor	I		poor	Fair
	1001	POOL	! 	i I	i	i i	1001	1001	i	i		i
208:	i	i	i İ	i I	i	i	i i	i i	i	i	i	i
Vonid	Poor	Fair	Fair		i		Poor	Very	Fair	i	  Very	Good
	i	i	i	i	i	i	i	poor	i	i	poor	i
	i	i	İ	į	i	i	i İ	i -	i	i	i -	İ
Seldom	Poor	Fair	Good	i	i	i			Fair	j	i	Good
	ĺ	İ	ĺ	ĺ	İ	ĺ	ĺ	ĺ	ĺ	İ	ĺ	ĺ
209:												
Wages	Fair	Fair	Good			Fair	Poor	Very	Fair		Very	Fair
								poor			poor	
210:	!			!	!	!	!	!		!		
Wages	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	!	!	!	!	ļ	ļ	ļ	poor	!	!	poor	
011	!	1	!	!		!				!		
211:	   D = ===	1 2 2 2 2 2 2	   == 4==		1	1	   Do		   To does	!		
Wages	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	 	1	 	 	1	 	 	poor	1	!	poor	 
212:	 	1	l I	 	1	 	l I	l I	1	!	 	l I
Wages	l I Poor	  Fair	  Fair	! !	 	 	  Poor	  Very	  Fair	! 	  Very	  Good
наусь	I	I	rair	 		 	I	poor	l arr		poor	l Good
	i i	i	! 	i I	i	i i	! 	1001	i	i		i
Karval	Poor	Fair	  Fair			' 	  Very	  Very	  Fair	i	  Very	  Good
			 	i	i	:	poor	poor		i	poor	
	i	i	İ	i	i	i	i -	i -	i	i	i -	i
213:	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
Weld	Fair	Fair	Fair				Poor	Very	Fair		Very	Good
								poor			poor	
214:												
Weld	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
	1	1		[	1			poor	1		poor	
		1			[				1			
215:	ļ.	1	ļ	ļ.	1	I	ļ.	ļ.	1	[		l
Wiley	Poor	Fair	Fair	!		:	•	Very	Poor	ļ	Very	Fair
	ļ.	1	ļ	ļ	Į.	I	poor	poor	Į.		poor	ļ .
216:		I .	l 	I	I	 	 	 	1			l .
Wiley	Poor	Fair	Fair			:	:	: -	Poor		Very	Fair
	I I	I	l I	I I	I	I	poor	poor	I	1	poor	I
	I	I	I	I	I	I	I	I	I	I	I	I

Table 11.--Wildlife Habitat--Continued

	I	1	Potentia	al for	habitat	elemen	ts		Poten	tial as	habitat	for-
Map symbol	Grain		Wild	l	I	I	I	l	Open-	Wood-	Wetland	Range-
and soil name	and	Grasses	herba-	Hard-	Conif-	Shrubs	Wetland	Shallow	land	land	wild-	land
	seed	and	ceous	wood	erous		plants	water	wild-	wild-	life	wild-
	crops	legumes	plants	trees	plants		L	areas	life	life		life
217:												
Wilid	Poor	Fair	Fair				Poor	Very	Fair		Very	Good
								poor	l		poor	
218:												
Water.												
219:												
Gravel pits	Very	Very	Very	Very	Very	Very	Very	Very	Very	Very	Very	Very
	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor	poor
	l											
220:												
Access denied.												

## Table 12a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

and soil name	Pct. of map	basements	ut	Dwellings with basements		Small commercia buildings	al
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	:
101: Apishapa, rarely ponded	       90     	    Very limited:   Depth to   saturated zone   Shrink-swell	1.00	saturated zone	1.00 	    Very limited:   Depth to   saturated zone   Shrink-swell	      1.00    1.00
102: Arvada	     85   	    Very limited:   Shrink-swell	      1.00	    Very limited:   Shrink-swell	:	    Very limited:   Shrink-swell	      1.00
103: Ascalon	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
104: Ascalon	   85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
105: Ascalon	   85 	  Not limited 	 	  Not limited 	 	  Somewhat limited:   Slope	0.86
106: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
107: Ascalon, dry	   85 	    Not limited 	   	  Not limited 	   	    Not limited 	     
108: Ascalon, dry	     85 	  Not limited 	 	  Not limited 	 	  Somewhat limited:   Slope	    0.86
109: Ascalon	     55 	    Not limited 	     	    Not limited 	į	    Not limited 	     
Haxtun	30	Not limited 	 	Not limited	 	Not limited 	
110: Ascalon, dry	   55 	  Not limited 	   	  Not limited 	   	  Not limited 	   
Haxtun, dry	30 	Not limited 	 	Not limited 	 	Not limited 	
111: Bacid	   85   	•	    0.50	  Somewhat limited:   Shrink-swell	    0.50	  Somewhat limited:   Shrink-swell	    0.50
112: Bankard, occasionally flooded	       55   	      Very limited:   Flooding 	          1.00	      Very limited:   Flooding 		      Very limited:   Flooding	        1.00
occasionally flooded	   30 	  Very limited:   Flooding 	    1.00	  Very limited:   Flooding 	      1.00	  Very limited:   Flooding 	    1.00

Table 12a.--Building Site Development--Continued

and soil name	  Pct.   of  map	basements	ut	   Dwellings with   basements 		   Small commercia   buildings 	1
	unit   	Rating class and limiting features		Rating class and   limiting features		Rating class and   limiting features	•
113: Bijou	     90 	    Not limited 	     	    Not limited 	     	    Not limited 	     
114: Bijou, moist	   90 	  Not limited 	   	  Not limited 	   	  Not limited 	   
115: Bijou, moist	   90 	  Not limited 	   	  Not limited 	   	  Very limited:   Slope	    1.00
116: Blakeland	     85 	    Not limited   	       	    Not limited   	       	    Very limited:   Slope 	      1.00
117: Bresser	     85 	    Not limited 	     	  Not limited 	 	  Not limited 	     
118: Campo	     85 	    Not limited 	     	    Not limited 	 	  Not limited 	     
119: Canyon	   55     	Slope	    1.00  1.00 	bedrock	    1.00    1.00	Depth to soft	  1.00  1.00
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	į
120: Colby	     85 	    Not limited 	     	    Not limited 	;   	    Not limited 	   
121: Colby	   85   	  Not limited   	     	  Not limited   	     	  Very limited:   Slope 	    1.00
122: Colby	     50	    Not limited 	     	    Not limited 	     	    Not limited 	     
Weld	40 	Not limited 	i I	Not limited 	i I	Not limited	į I
123: Firstview	   85 	•	    0.50	•	    0.50	  Somewhat limited:   Shrink-swell	    0.50
124: Fort Collins	     90	    Not limited 	     	    Not limited 	     	    Not limited 	     
125: Fort Collins	     85 	    Not limited 	     	    Not limited 	   	    Not limited 	   
126: Fort Collins	   55 	  Not limited 	   	    Not limited 	:     	  Very limited:   Slope	1.00
Karval	   35 		    1.00	  Very limited:   Slope	    1.00	  Very limited:   Slope	    1.00
127: Fort Collins	     50 	    Not limited 	     	    Not limited 	     	    Not limited 	     

Table 12a.--Building Site Development--Continued

and soil name	Pct. of map unit	basements	ut	Dwellings with basements		   Small commercia   buildings 	1
		   Rating class and   limiting features				Rating class and	•
127: Platner	     35 	'		    Somewhat limited:   Shrink-swell		    Somewhat limited:   Shrink-swell	      0.50
128: Fort Collins	   50 	  Not limited	   	  Not limited	i   	  Very limited:   Slope	1.00
Razor, moist	   40       	Shrink-swell	1.00	Depth to soft bedrock	1.00	Slope	  1.00  1.00   
129: Fort	   85 	•		    Somewhat limited:   Shrink-swell 		    Somewhat limited:   Shrink-swell 	      0.50
130: Fort	   85 	•		'		  Somewhat limited:   Shrink-swell	    0.50
131: Fort	   55   	•		  Somewhat limited:   Shrink-swell	:	  Very limited:   Slope   Shrink-swell	    1.00  0.50
Karval	   35   			  Very limited:   Slope 		  Very limited:   Slope 	    1.00
132: Fort	   50 	'		  Somewhat limited:   Shrink-swell	:	  Very limited:   Slope   Shrink-swell	    1.00  0.50
Razor	   40     	Shrink-swell	1.00	Depth to soft bedrock		Slope 	  1.00  1.00 
133: Haversid, rarely flooded	       85 		        1.00	    Very limited:   Flooding	        1.00	    Very limited:   Flooding	        1.00
134: Haverson, rarely flooded	     85 		      1.00	      Very limited:   Flooding	        1.00	      Very limited:   Flooding	        1.00
135: Haxtun	   85 	  Not limited 	   	  Not limited 	 	  Not limited 	   
136: Haxtun, dry	   85 	  Not limited 	   	    Not limited 	   	    Not limited 	   
137: Haxtun, dry	   55 	  Not limited 	   	    Not limited 	   	    Not limited 	   
Olney	30 	Not limited 	 	  Not limited 	 	  Not limited 	

Table 12a.--Building Site Development--Continued

and soil name	Pct.	basements	ut	   Dwellings with   basements		   Small commercia   buildings	ı1
	map  unit	i	l **- 1	 	1**-1	 	Ivv. 1
	 	Rating class and   limiting features		Rating class and   limiting features		Rating class and   limiting features	Value
138: Haxtun	     55 	    Not limited 	     	    Not limited 	     	    Not limited 	     
Olnest	   30 	  Not limited	   	  Not limited		  Not limited	
139: Keith	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
140: Keith	     85   	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Slope 	    0.86
141: Kim	     90 	    Not limited 	;     	    Not limited 	;     	    Not limited 	     
142: Kim	     90 	  Not limited   	 	  Not limited   	     	  Very limited:   Slope	    1.00
143: Kimst	     90 	    Not limited 	     	    Not limited 	     	    Not limited 	     
144: Kimst	   90 	  Not limited 	   	  Not limited 	   	  Very limited:   Slope	    1.00
145: Las Animas, occasionally flooded	       85   	Flooding	1.00	· -	1.00	  -  -  Very limited:   Flooding   Depth to   saturated zone	        1.00  0.44
146: Limon, rarely flooded	       85   	Flooding	        1.00	· -	        1.00		      1.00  1.00
147: Limon, moist, rarely flooded	•	Flooding	        1.00  1.00	· -	        1.00  1.00	  -  Very limited:   Flooding     Shrink-swell	      1.00  1.00
148: Manzanola	     85 	•	      0.50	  Somewhat limited:   Shrink-swell	      0.50	    Somewhat limited:   Shrink-swell	    0.50
149: Manzanst, rarely flooded	       90 	Flooding	        1.00  0.50		        1.00  0.50	!	      1.00  0.50
150: Manzanst	     85 	•	      0.50 	    Somewhat limited:   Shrink-swell 	      0.50	    Somewhat limited:   Shrink-swell 	      0.50

Table 12a.--Building Site Development--Continued

and soil name	  Pct.   of  map	basements	ut	   Dwellings with   basements 		   Small commercia   buildings 	al
	unit	•					
		Rating class and	Value	Rating class and	Value	Rating class and	Value
		limiting features		limiting features		limiting features	
151:				 		 	
Midway	l I 85	  Somewhat limited:	l I	  Very limited:	l I	  Somewhat limited:	
		Depth to soft	1.00		1.00	Depth to soft	1.00
	i	bedrock	i	bedrock	į	bedrock	į
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
	ļ		!				ļ
152: Midway, moist	   0E	  Comowhat limited:		  Very limited:	 	  Somewhat limited:	1
midway, moist	65	Depth to soft	1.00	Depth to soft	1	Depth to soft	1 1.00
	i	bedrock		bedrock		bedrock	
	i	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			1		I		
153:			!		!		
Midway	55	:	:	Very limited:	:	Very limited:	
	l I	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope Depth to stof	1.00
	l I	Shrink-swell	0.50	'	  0.50	bedrock	1
	i	Slope	0.16	'	0.16	Shrink-swell	0.50
	İ	İ	İ	İ	İ	İ	į
Razor	30	Very limited:	•	Very limited:		Very limited:	
		!	1.00	'	1.00	Shrink-swell	1.00
		Slope	0.16		0.42	Slope	1.00
	l I	l I	!	bedrock   Slope	  0.16	İ	
	l I	 	ŀ	   probe	0.16 	 	1
154:	i	 	i	! 	i	! 	i
Midway, moist	55	Somewhat limited:	İ	Very limited:	İ	Very limited:	į
		Depth to soft	1.00	Depth to soft	1.00	Slope	1.00
		bedrock	!	bedrock		Depth to soft	1.00
		!	0.50		0.50	bedrock	
	l I	Slope 	0.16 	Slope 	0.16 	Shrink-swell	0.50 
Razor, moist	30	  Very limited:	i	  Very limited:	İ	  Very limited:	i
•	i	• -	1.00		1.00	Shrink-swell	1.00
	İ	Slope	0.16	Depth to soft	0.42	Slope	1.00
				bedrock			
		1		Slope	0.16	1	1
155:	 	 		İ	l I	İ	1
	l I 55	  Very limited:	i	  Very limited:	 	  Very limited:	1
		Slope	1.00		1.00	Slope	1.00
	i	Depth to soft	1.00		į	Depth to soft	1.00
		bedrock	1	•	1.00	•	
	!	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Rock outcrop		 		  Not rated		  Not rated	1
ROCK OUTCIOP	30 	NOC Taced 	i	Not lated 	 	Not rated	1
156:	i	i İ	i	i İ	i	i İ	i
Midway, moist	55	Very limited:	ĺ	Very limited:	ĺ	Very limited:	İ
			•		1.00		1.00
			1.00	•		Depth to soft	1.00
		bedrock	10 50		1.00	'	
	I I	Shrink-swell	0.50 	Shrink-swell	0.50 	Shrink-swell	0.50 
Rock outcrop, moist-	30	Not rated	i	  Not rated	İ	  Not rated	ĺ
	İ		i		i		i
157:	İ	ĺ	ĺ	İ	ĺ		

Table 12a.--Building Site Development--Continued

and soil name	  Pct.   of  map	basements	ut	   Dwellings with   basements 		   Small commercia   buildings 	11
	unit   	•	:	   Rating class and   limiting features		   Rating class and   limiting features	Value
158: Nunn	     55	    Not limited	   	    Not limited	   	    Not limited	   
Sampson, rarely flooded	     30 			    Very limited:   Flooding	      1.00	    Very limited:   Flooding 	      1.00
159: Nunn, dry	     50	    Not limited 	   	    Not limited 	'     	    Not limited 	   
Sampson, dry, rarely flooded				    Very limited:   Flooding		    Very limited:   Flooding	1.00
160: Olnest	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
161: Olnest	   85 	  Not limited 	   	  Not limited 	   	    Not limited 	     
162: Olnest	   85 	  Not limited 	   	  Not limited 	   	  Not limited 	   
163: Olnest	90	:	    0.04	  Somewhat limited:   Slope	    0.04	  Very limited:   Slope	
164: Olney	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
165: Olney	   85 	  Not limited 	i I I	    Not limited 	;   	  Not limited 	     
166: Olney	   85 	  Not limited 	 	  Not limited 	   	  Not limited 	 
167: Olney	   90 	:	    0.04	  Somewhat limited:   Slope	    0.04	  Very limited:   Slope 	    1.00
168: Olney	     55 	  Not limited 	i 	  Not limited 	i   	  Very limited:   Slope	    1.00
Midway	   30         	Depth to soft bedrock	1.00 	bedrock	1.00 	  Very limited:   Depth to soft   bedrock   Slope   Shrink-swell	  1.00    1.00  0.50
169: Otero	   85 	  Not limited 	   	  Not limited 	   	  Not limited 	   
170: Oterodry	   85 	  Not limited 	     	    Not limited 	   	    Not limited 	   
171: Oterodry	     85 	    Not limited 	     	    Not limited 	     	  Somewhat limited:   Slope	0.86
172: Platner	     85   	•	      0.50	  Somewhat limited:   Shrink-swell 	      0.50	  Somewhat limited:   Shrink-swell 	      0.50

Table 12a.--Building Site Development--Continued

	Pct. of map unit	basements	ut	Dwellings with basements		Small commercia   buildings 	1
	   			Rating class and		Rating class and limiting features	Value
173: Platner	     50 	!	      0.50	    Somewhat limited:   Shrink-swell 	      0.50	    Somewhat limited:   Shrink-swell 	      0.50
Ascalon	35	  Not limited	į	  Not limited	į	  Not limited	į
174: Pleasant, rarely ponded	     90     	Depth to saturated zone	        1.00    1.00	saturated zone	        1.00 	saturated zone	      1.00    1.00
175: Rago, rarely flooded	   90   	Flooding	    1.00  0.50			  Very limited:   Flooding   Shrink-swell	    1.00  0.50
176: Rago, dry, rarely flooded	     90   	Flooding	      1.00  0.50		      1.00  0.50	  -  Very limited:   Flooding   Shrink-swell	    1.00  0.50
177: Razor	   85     		      1.00 	!	      1.00  0.42	  Very limited:   Shrink-swell 	    1.00 
178: Razor, moist	     85     	• -	      1.00   	!	      1.00  0.42	  Very limited:   Shrink-swell   	      1.00
179: Sampson, rarely flooded	       90 		        1.00	      Very limited:   Flooding	        1.00	      Very limited:   Flooding	      1.00
180: Sampson, dry, rarely flooded			        1.00	    Very limited:   Flooding	        1.00	    Very limited:   Flooding	      1.00
181: Satanta	90	    Not limited	i !	  Not limited	 	    Not limited	!
182: Satanta, dry	     90 	    Not limited 	     	    Not limited 	     	    Not limited 	     
183: Seldom, rarely flooded	   85     	Flooding	      1.00  1.00		      1.00  1.00		      1.00  1.00

Table 12a.--Building Site Development--Continued

and soil name	  Pct.   of  map	basements	ut	   Dwellings with   basements 		   Small commercial   buildings 		
	unit   		Value	   Rating class and   limiting features	Value	Rating class and limiting features	Value	
184: Shingle	     55     	    Somewhat limited:   Depth to soft   bedrock	      1.00 	    Very limited:   Depth to soft   bedrock 	      1.00 	  Somewhat limited:   Depth to soft   bedrock   Slope	    1.00    0.12	
Midway	   30       	bedrock	    1.00    0.50	  Very limited:   Depth to soft   bedrock   Shrink-swell	    1.00    0.50	  Somewhat limited:   Depth to soft   bedrock   Shrink-swell   Slope	  1.00    0.50  0.12	
185: Shingle, moist	     55     	•	      1.00 	    Very limited:   Depth to soft   bedrock	      1.00 	  Somewhat limited:   Depth to soft   bedrock   Slope	    1.00    0.12	
Midway, moist	   30       	Depth to soft bedrock	    1.00    0.50	  Very limited:   Depth to soft   bedrock   Shrink-swell	    1.00    0.50	  Somewhat limited:   Depth to soft   bedrock   Shrink-swell   Slope	  1.00    0.50  0.12	
186: Sundance	     85 	    Somewhat limited:   Shrink-swell	      0.50	    Somewhat limited:   Shrink-swell	      0.50	    Somewhat limited:   Shrink-swell	      0.50	
187: Table Mountain, rarely flooded	       85 		        1.00	    Very limited:   Flooding	        1.00	    Very limited:   Flooding		
188: Travessilla	     60     	Depth to hard bedrock	      1.00    1.00	bedrock	      1.00    1.00	     Very limited:   Depth to hard   bedrock   Slope	    1.00    1.00	
Rock outcrop	   25	  Not rated	 	  Not rated	 	  Not rated		
189: Truckton	     85	    Not limited 	   	    Not limited 	   	    Not limited	     	
190: Truckton	     85 	    Not limited 	     	    Not limited 	     	  Somewhat limited:   Slope	      0.86	
191: Truckton, dry	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     	
192: Truckton, dry	   85 	  Not limited 	     	    Not limited 	     	  Somewhat limited:   Slope	    0.86	
193: Valent	     85   	!	      0.63	    Somewhat limited:   Slope 	      0.63	    Very limited:   Slope 	      1.00	

Table 12a.--Building Site Development--Continued

and soil name	Pct. of map	basements	ut	Dwellings with   basements 		Small commercia   buildings 	1
	unit   		Value	   Rating class and   limiting features		   Rating class and   limiting features	Value
194: Valent	     55 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	      0.86
Bijou	   30 	  Not limited 	   	  Not limited 	   	  Somewhat limited:   Slope	    0.86
195: Valent	     60 	:	      0.96	    Somewhat limited:   Slope	      0.96	    Very limited:   Slope	      1.00
Vona	   30 	:	    0.04 	•	    0.04 	  Very limited:   Slope 	    1.00
196: Valent	     55 	•	      0.96	  Somewhat limited:   Slope	      0.96	  Very limited:   Slope	    1.00
Vonid	   35 		    0.04 	  Somewhat limited:   Slope 	    0.04	  Very limited:   Slope 	1   1.00
197: Vona	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Slope	      0.12
198: Vona	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
199: Vona	   85   	  Somewhat limited:   Slope 	    0.04	  Somewhat limited:   Slope 	    0.04	  Very limited:   Slope 	    1.00
200: Vona	   35 	    Not limited 	     	    Not limited 	     	  Very limited:   Slope	    1.00
Karval	   30 	:	    1.00	  Very limited:   Slope	    1.00	  Very limited:   Slope	
Midway, moist	   20         	Slope   Depth to soft   bedrock	 	bedrock   Slope	1.00	bedrock	  1.00  1.00    0.50
201: Vona	   55 	  Not limited 	   	  Not limited 	   	  Very limited:   Slope	    1.00
Midway, moist	   30       	Depth to soft bedrock	    1.00    0.50	bedrock	    1.00    0.50	bedrock	  1.00    1.00  0.50
202: Vona	     60   	    Somewhat limited:   Slope 	      0.96 	    Somewhat limited:   Slope 	      0.96	    Very limited:   Slope 	      1.00

Table 12a.--Building Site Development--Continued

	Pct. of map	basements	ut	   Dwellings with   basements 		   Small commercia   buildings 	1
	   			Rating class and limiting features		Rating class and limiting features	Value
202: Seldom	     20   	Depth to saturated zone	      1.00    0.96	saturated zone	      1.00    0.96	saturated zone	      1.00    1.00
203: Vonid	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Slope	      0.12
204: Vonid	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
205: Vonid	     85   	•	      0.04	    Somewhat limited:   Slope 	      0.04	    Very limited:   Slope 	    1.00
206: Vonid	     35 	    Not limited 	     	    Not limited 	   	    Very limited:   Slope	1.00
Karval	   30 	:	    1.00	  Very limited:   Slope	    1.00	  Very limited:   Slope	
Midway	   20       	Slope   Depth to soft   bedrock	  1.00  1.00    0.50	bedrock   Slope	  1.00    1.00  0.50	Depth to soft bedrock	  1.00  1.00    0.50
207: Vonid	     55 	    Not limited 	     	    Not limited 	     	    Very limited:   Slope	      1.00
Midway	   30       	Depth to soft bedrock	    1.00    0.50	bedrock	    1.00    0.50	bedrock	  1.00    1.00  0.50
208: Vonid	     65 	•	      0.96	    Somewhat limited:   Slope	      0.96	    Very limited:   Slope	      1.00
Seldom	   20     	Depth to saturated zone		saturated zone		  Very limited:   Depth to   saturated zone   Slope	  1.00    1.00
209: Wages	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
210: Wages	   85 	•	    0.04	  Somewhat limited:   Slope	      0.04	  Very limited:   Slope	    1.00
211: Wages, dry	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     

Table 12a.--Building Site Development--Continued

Map symbol	Pct.	Dwellings witho	ut	Dwellings with		Small commercia	al
and soil name	of	basements		basements		buildings	
	map						
	unit						
	1	Rating class and	Value	Rating class and	Value	Rating class and	Value
	İ	limiting features	ĺ	limiting features	ĺ	limiting features	Ĺ
	Ī		ĺ		İ		Ī
212:	i		i	į	İ		i
Wages	60	Somewhat limited:	i	Somewhat limited:	İ	Very limited:	i
_	i	Slope	0.37	Slope	0.37	Slope	11.00
	i	' - 	i	i -	i	' - 	i
Karval	25	Somewhat limited:	i	Somewhat limited:	i	  Very limited:	i
	i	Slope	0.37	Slope	0.37	Slope	1.00
	i	 İ	i	i -	i	' - 	i
213:	i		i	i i	i	İ	i
Weld	l 85	Not limited	i	Not limited	i	Not limited	i
	i		i	1	i		i
214:	i	! 	i		i	! 	i
Weld, dry	l 85	Not limited	i	Not limited	i	Not limited	i
		 	i	 	i	l	i
215:	i	! 	i	! 	i	! 	i
Wiley	l 85	Not limited	i	Not limited	i	Not limited	i
		 	i	I	i	 	i
216:	i	! 	i	! 	i	! 	i
Wiley	l 85	Not limited	i	Not limited	i	  Very limited:	i
		 	i	 	i	Slope	11.00
	i	! 	i	! 	i		1
217:	i	! 	i	! 	i	! 	i
Wilid	l l 85	Not limited	i	  Not limited	i	Not limited	i
	1		i		i		i
218:	i	! 	i	! 	i	! 	i
Water	1 90	Not rated	<u> </u>	  Not rated	i	Not rated	1
Macci	1		<u> </u>	l	i	l	1
219:	1	l 		! 		l 	1
Gravel pits	11100	  Not rated	1	  Not rated	l I	  Not rated	1
Graver Pics	1 100	Inoc raceu		Mot lateu		Inoc raced	1
220:	1	 		 		 	1
	  100	Not rated		  Not rated	1	  Not rated	-
Access denied	1100	Not rated	1	INOL Faced	1	Not rated	!

Table 12b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

and soil name	  Pct.   of  map  unit	į	đ	   Shallow excavati   	ons	Lawns and landscaping	
	•	Rating class and limiting features		Rating class and limiting features		•	
101: Apishapa, rarely ponded	:	Depth to saturated zone Frost action Shrink-swell	1.00    1.00	Depth to saturated zone Too clayey Cutbanks cave	1.00    0.12	saturated zone	      1.00       
102: Arvada	     85   	Low strength	1.00			Sodium content	1.00
103: Ascalon	•	    Somewhat limited:   Frost action 		•		•	     
104: Ascalon	•	  Somewhat limited:   Frost action		'		•	     
105: Ascalon	•	  Somewhat limited:   Frost action		'		•	 
106: Ascalon, dry		  Somewhat limited:   Frost action				  Not limited   	 
107: Ascalon, dry	:	    Somewhat limited:   Frost action	:	:		:	 
108: Ascalon, dry	•	    Somewhat limited:   Frost action		•	0.10	    Not limited 	 
109: Ascalon	     55 	•		  Somewhat limited:   Cutbanks cave		    Not limited 	 
Haxtun	   30 				0.10		     
110: Ascalon, dry	     55 	•		    Somewhat limited:   Cutbanks cave	      0.10	    Not limited   	
Haxtun, dry	•	•		  Somewhat limited:   Cutbanks cave	i	  Not limited   	   
111: Bacid	     85 	Low strength	1.00	  Somewhat limited:   Cutbanks cave   Too clayey	    0.10  0.03	•	

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map	streets	i	   Shallow excavation   	ons	   Lawns and landsca   	ping
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	
112: Bankard, occasionally flooded	         55   		          1.00	:	          1.00	      Somewhat limited:   Droughty   Flooding	          0.90
Glenberg, occasionally flooded	       30   		        1.00	:	      1.00  0.60	    Somewhat limited:   Flooding	        0.60
113: Bijou	     90 	    Not limited   	       	    Very limited:   Cutbanks cave 	      1.00	    Not limited   	       
114: Bijou, moist	     90 	  Not limited   	       	    Very limited:   Cutbanks cave 	      1.00	  Not limited   	       
115: Bijou, moist	     90 	  Not limited 	     	  Very limited:   Cutbanks cave	      1.00	  Not limited 	   
116: Blakeland	     85 	    Not limited 	       	    Very limited:   Cutbanks cave		    Somewhat limited:   Droughty	      0.69
117: Bresser	     85   	!	      0.50	    Very limited:   Cutbanks cave 		    Somewhat limited:   Droughty	      0.10
118: Campo	     85   		      0.78 	!	    0.28  0.10	  Not limited 	     
119: Canyon	   55         	Slope	:	bedrock   Slope	1.00    1.00		1.00  0.20 
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	   
120: Colby	   85   	  Not limited   	     	  Somewhat limited:   Cutbanks cave 	    0.10 	  Not limited   	     
121: Colby	   85   	  Not limited   	     	  Somewhat limited:   Cutbanks cave		  Not limited   	     
122: Colby	   50 	  Not limited 	     	  Somewhat limited:   Cutbanks cave 	      0.10	  Not limited 	 

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map	streets	d	Shallow excavati   	ons	Lawns and landsca	ping
	unit	:	Value	   Rating class and	Value	   Rating class and	Value
		limiting features		limiting features		limiting features	<u> </u>
122: Weld	     40 			    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	     
123: Firstview	     85   	Low strength	      1.00  0.50	:	:	  Very limited:   Sodium content 	
124: Fort Collins	     90 	    Not limited   	       	    Somewhat limited:   Cutbanks cave	      0.10	    Not limited   	     
125: Fort Collins	     85   	    Not limited   	       	    Somewhat limited:   Cutbanks cave 	      0.10	    Not limited   	     
126: Fort Collins	     55 	  Not limited 	i   	  Somewhat limited:   Cutbanks cave	0.10	  Not limited 	 
Karval	   35       		    1.00     	Cutbanks cave	:	  Very limited:   Droughty   Slope   Gravel content	  1.00  1.00  0.32
127: Fort Collins	     50 	    Not limited 	   	  Somewhat limited:   Cutbanks cave	    0.10	    Not limited 	     
Platner	   35     	Low strength		Cutbanks cave	    0.10  0.03	  Not limited     	     
128:	i	İ	i	İ	i	İ	i
Fort Collins	50   	Not limited   	   	Somewhat limited:   Cutbanks cave 	  0.10 	Not limited   	   
Razor, moist	40           		1.00  1.00	bedrock Too clayey Slope	0.42	Very limited:   Sodium content   Depth to bedrock   Slope 	  1.00  0.42  0.16 
129: Fort	   85   	Low strength		Cutbanks cave	    0.10 	  Not limited   	       
130: Fort	   85   	Low strength	    1.00  0.50	:	    0.10	  Not limited   	
131: Fort	     55 	Low strength		•	      0.10	    Not limited   	

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map	streets	d	Shallow excavati   	ons	Lawns and landsca   	ping
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	Value
131: Karval	     35     		      1.00   	!	      1.00  1.00		    1.00  1.00  0.32
132: Fort	     50 	Low strength	    1.00  0.50	:	    0.10	  Not limited 	
Razor	   40         	Low strength	:	bedrock   Too clayey   Slope	:	•	  1.00  0.42  0.16 
133: Haversid, rarely flooded	       85 	•	•	    Somewhat limited:   Cutbanks cave	        0.10	      Not limited 	       
134: Haverson, rarely flooded	       85 	:	        0.40	    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	       
135: Haxtun	     85 	:	      0.50	  Somewhat limited:   Cutbanks cave	0.10	    Not limited 	     
136: Haxtun, dry	     85 	•		    Somewhat limited:   Cutbanks cave		    Not limited 	
137: Haxtun, dry	     55 	•	      0.50	:		    Not limited 	
Olney	   30 	  Not limited   	     	  Somewhat limited:   Cutbanks cave 	    0.10	  Not limited   	     
138: Haxtun	     55 	:	:	  Somewhat limited:   Cutbanks cave	:	  Not limited 	     
Olnest	•	•		  Somewhat limited:   Cutbanks cave 	•	  Not limited   	   
139: Keith	:	Low strength		  Somewhat limited:   Cutbanks cave	•	  Not limited   	
140: Keith	:	Low strength	:	    Somewhat limited:   Cutbanks cave 	:	    Not limited   	       

Table 12b.--Building Site Development--Continued

	Pct. of map unit	streets	d	Shallow excavations		Lawns and landscaping	
		Rating class and	•	Rating class and limiting features	•	Rating class and limiting features	•
141: Kim	     90 	    Not limited   	     	    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	     
142: Kim	     90 	    Not limited   	     	    Somewhat limited:   Cutbanks cave		    Not limited   	       
143: Kimst	     90 	  Not limited   	       	    Somewhat limited:   Cutbanks cave	    0.10	    Not limited   	
144: Kimst	     90 	    Not limited   	     	    Somewhat limited:   Cutbanks cave	    0.10	    Not limited   	
145:  Las Animas,  occasionally  flooded	       85     	Frost action	1.00	Depth to	:	saturated zone	        0.60  0.19
146: Limon, rarely flooded	       85   		      1.00  1.00  0.40	Cutbanks cave	        0.28  0.10		        1.00  0.13
147: Limon, moist, rarely flooded		  -  Very limited:   Low strength   Shrink-swell   Flooding	      1.00  1.00  0.40	Cutbanks cave	        0.28  0.10		      1.00  0.13
148: Manzanola	     85   	: -	:	    Somewhat limited:   Cutbanks cave   	      0.10	    Not limited   	       
149: Manzanst, rarely flooded	       90   	Low strength	1.00	Too clayey	        0.10  0.03		
150: Manzanst	     85   	    Very limited:   Low strength   Shrink-swell	•	:	      0.10  0.03		

Table 12b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map	streets	d	   Shallow excavati   	ons	   Lawns and landsca   	ping
	unit   		Value	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
151: Midway	   85       	  Very limited:   Depth to soft   bedrock   Low strength   Shrink-swell	    1.00    1.00  0.50	  Very limited:   Depth to soft   bedrock   Cutbanks cave	      1.00    0.10	    Very limited:   Depth to bedrock   Droughty 	      1.00  0.92 
152: Midway, moist	   85         	Very limited:   Depth to soft   bedrock   Low strength   Shrink-swell	    1.00    1.00  0.50	bedrock	      1.00    0.10	    Very limited:   Depth to bedrock   Droughty   	    1.00  0.92   
153: Midway	   55       	  Very limited:   Depth to soft   bedrock   Low strength   Shrink-swell   Slope	  1.00    1.00  0.50  0.16	bedrock   Slope	  1.00    0.16  0.10	  Very limited:   Depth to bedrock   Droughty   Slope 	  1.00  0.92  0.16
Razor	   30         	  Very limited:   Low strength   Shrink-swell   Slope 	!		  0.42    0.28  0.16  0.10	  Very limited:   Sodium content   Depth to bedrock   Slope 	  1.00  0.42  0.16
154: Midway, moist	   55         	  Very limited:   Depth to soft   bedrock   Low strength   Shrink-swell   Slope	    1.00    1.00  0.50  0.16	bedrock	    1.00    0.16  0.10	  Very limited:   Depth to bedrock   Droughty   Slope 	    1.00  0.92  0.16
Razor, moist	   30         	  Very limited:   Low strength   Shrink-swell   Slope 	  1.00  1.00  0.16 	bedrock	  0.42    0.28  0.16  0.10	Depth to bedrock	  1.00  0.42  0.16 
155: Midway	   55       	Slope   Depth to soft   bedrock   Low strength	  1.00  1.00    1.00  0.50	bedrock   Slope   Cutbanks cave	  1.00    1.00  0.10	  Very limited:   Depth to bedrock   Slope   Droughty 	  1.00  1.00  0.92
Rock outcrop	   30 	  Not rated 	   	  Not rated 	   	  Not rated 	   
156: Midway, moist	   55           	Slope	  1.00  1.00    1.00  0.50	bedrock   Slope   Cutbanks cave	  1.00    1.00  0.10	Slope   Droughty	  1.00  1.00  0.92   

Table 12b.--Building Site Development--Continued

	Pct. of map unit	İ	đ	Shallow excavations		Lawns and landscaping     	
		Rating class and	•	Rating class and   limiting features			
156: Rock outcrop, moist-	     30 	    Not rated 	   	    Not rated 	     	    Not rated 	     
157: Nunn	   85   	•	0.50	  Somewhat limited:   Cutbanks cave   Too clayey	•	İ	       
158: Nunn	•	•	0.50	    Somewhat limited:   Cutbanks cave   Too clayey	0.10	İ	       
Sampson, rarely flooded	•	Frost action		    Somewhat limited:   Cutbanks cave 	•	    Not limited   	       
159: Nunn, dry	•	•		  Somewhat limited:   Cutbanks cave   Too clayey	0.10	İ	       
Sampson, dry, rarely flooded	•	Frost action		  Somewhat limited:   Cutbanks cave		•	       
160: Olnest	•	•		    Somewhat limited:   Cutbanks cave	•	•	     
161: Olnest		•		    Somewhat limited:   Cutbanks cave 	•	•	       
162: Olnest	   85 	•		  Somewhat limited:   Cutbanks cave	•	•	       
163: Olnest	   90   	Frost action	0.50	  Somewhat limited:   Cutbanks cave   Slope	•	Slope	    0.04 
164: Olney	   85 	    Not limited 		    Somewhat limited:   Cutbanks cave		    Not limited 	     
165: Olney	     85 	    Not limited   	       	    Very limited:   Cutbanks cave 		    Not limited   	       
166: Olney	     85 	  Not limited   	       	    Very limited:   Cutbanks cave 		  Not limited   	       
167: Olney	   90   	•	•	•	    1.00  0.04		0.04

Table 12b.--Building Site Development--Continued

	Pct.  Local roads and   of   streets		d	Shallow excavati 	ons	Lawns and landsca 	ping
	map  unit	:		i I		;   	
	 	Rating class and limiting features	•	Rating class and limiting features	•		•
168:		 		 		 	
Olney	   55 	  Not limited 		  Very limited:   Cutbanks cave	1.00	  Not limited 	 
Midway		Depth to soft bedrock Low strength	1.00	Depth to soft bedrock Cutbanks cave		Droughty	  1.00  0.92   
169:	i		i		i	<u> </u>	i
Otero	85   	Not limited   	   	Somewhat limited:   Cutbanks cave 		•	   
170: Oterodry	   85   	  Not limited   	     	  Somewhat limited:   Cutbanks cave 	:	:	     
171: Oterodry	   85 	  Not limited   		  Somewhat limited:   Cutbanks cave	    0.10	:	 
172: Platner	   85     	Low strength	1.00	•	    0.10  0.03	•	       
173:	<u> </u>	' 	i	' 	i		i
Platner	50   	Low strength	1.00	Somewhat limited:   Cutbanks cave   Too clayey	•	į	   
Ascalon	   35   	•		  Somewhat limited:   Cutbanks cave	•	  Not limited   	     
174:	İ	 	i	 	i	<u> </u>	i
Pleasant, rarely ponded		Depth to saturated zone	1.00	saturated zone Too clayey	1.00	:	  1.00   
175: Rago, rarely flooded	     90 			    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	     
	 	Shrink-swell	0.50	ĺ	<u> </u> 	  -	<u> </u> 
176: Rago, dry, rarely flooded	:	• -	•	      Somewhat limited:	•	      Not limited	     
	   	Shrink-swell	1.00  0.50  0.40		0.10   	 	   

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map unit	streets	đ	   Shallow excavati     	ons	   Lawns and landsca     	ping
		   Rating class and   limiting features		   Rating class and   limiting features		Rating class and limiting features	
177: Razor	   85       	Low strength	:	Too clayey	:	Depth to bedrock	    1.00  0.42 
178: Razor, moist	   85         	Low strength	:	bedrock   Too clayey	:	Sodium content   Depth to bedrock	    1.00  0.42   
179: Sampson, rarely flooded	     90   	!	•		      0.10	    Not limited   	
180: Sampson, dry, rarely flooded	•	:	:	:	        0.10	      Not limited   	       
181: Satanta	     90 	:	:	    Somewhat limited:   Cutbanks cave	0.10	    Not limited 	
182: Satanta, dry	     90 	:	:	    Somewhat limited:   Cutbanks cave 	      0.10	    Not limited   	       
183: Seldom, rarely flooded	     85     	Depth to saturated zone	1.00	  Very limited:   Depth to   saturated zone   Cutbanks cave		    Very limited:   Depth to   saturated zone	      1.00   
184: Shingle	   55     	Depth to soft bedrock	    1.00    0.78	bedrock	    1.00    0.10	Droughty	  1.00  0.71
Midway	30         	Depth to soft bedrock Low strength	  1.00    1.00  0.50	bedrock Cutbanks cave	  1.00    0.10	Droughty	  1.00  0.92   
185: Shingle, moist	   55       	Depth to soft bedrock	    1.00    0.78	bedrock	    1.00    0.10	Droughty	    1.00  0.71 

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map	streets	đ	Shallow excavati   	Lawns and landsca	ping	
	unit   			   Rating class and   limiting features	•	   Rating class and   limiting features	Value
185: Midway, moist	   30       	Depth to soft   bedrock   Low strength	    1.00    1.00  0.50	     Very limited:   Depth to soft   bedrock   Cutbanks cave	      1.00    0.10	  Very limited:   Depth to bedrock   Droughty	    1.00  0.92 
186: Sundance	     85   	Low strength	      1.00  0.50	    Somewhat limited:   Cutbanks cave 	      0.10	    Not limited   	       
187: Table Mountain, rarely flooded	       85   	Frost action	        0.50  0.40	      Somewhat limited:   Cutbanks cave 	        0.10	      Not limited   	
188: Travessilla	   60         		    1.00    1.00	bedrock   Slope	    1.00    1.00  0.10	Depth to bedrock	1.00
Rock outcrop	   25 	  Not rated 	   	  Not rated 	   	  Not rated 	   
189: Truckton	   85 	!	    0.50	  Very limited:   Cutbanks cave	    1.00	  Somewhat limited:   Droughty	    0.21
190: Truckton	     85 	!	      0.50	  Very limited:   Cutbanks cave	1.00	  Somewhat limited:   Droughty	0.21
191: Truckton, dry	     85 	!	      0.50	    Very limited:   Cutbanks cave	1.00	    Somewhat limited:   Droughty	      0.21
192: Truckton, dry	     85 		      0.50	  Very limited:   Cutbanks cave	1.00	  Somewhat limited:   Droughty	0.21
193: Valent	   85     	•	      0.63   	  Very limited:   Cutbanks cave   Slope	    1.00  0.63		    0.69  0.63  0.50
194: Valent	     55   	    Not limited   	       	  Very limited:   Cutbanks cave 	      1.00	  Somewhat limited:   Droughty   Too sandy	      0.69  0.50
Bijou	   30 	  Not limited   	     	  Very limited:   Cutbanks cave	    1.00	  Not limited   	   

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map unit	streets	d	   Shallow excavati   	ons	   Lawns and landsca   	ping
	•	Rating class and		Rating class and limiting features		•	
195: Valent	     60   			Cutbanks cave	1.00	Droughty	    0.96  0.69  0.50
Vona	   30   	•		Cutbanks cave			    0.04 
196: Valent	   55     	•		Cutbanks cave	1.00	_	  0.96  0.69  0.50
Vonid	   35   	:	:	Cutbanks cave	:	Slope	    0.04 
197: Vona	     85   	    Not limited   	       	:	      1.00	    Not limited   	       
198: Vona	     85   	  Not limited   	     	  Very limited:   Cutbanks cave		  Not limited 	     
199: Vona	   85     			Cutbanks cave	•		    0.04 
200: Vona	   35 	  Not limited 	; 	:	    1.00	  Not limited 	     
Karval	   30     	•		Cutbanks cave	1.00	Slope	  1.00  1.00  0.32
Midway, moist	   20         	Slope   Depth to soft   bedrock   Low strength	  1.00  1.00    1.00  0.50	bedrock   Slope   Cutbanks cave	  1.00    1.00  0.10	Slope Droughty	  1.00  1.00  0.92 
201: Vona	     55 	    Not limited 	     	    Very limited:   Cutbanks cave	      1.00	    Not limited 	
Midway, moist	30         	Depth to soft bedrock Low strength	  1.00    1.00  0.50	bedrock Cutbanks cave	  1.00    0.10 	  Very limited:   Depth to bedrock   Droughty   	  1.00  0.92   

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map unit	İ	ıd	Shallow excavati     	ons	Lawns and landsca     	ping
		Rating class and	•	Rating class and   limiting features			
202: Vona	     60 	•		Cutbanks cave			      0.96
Seldom			1.00	Depth to saturated zone	1.00    0.96	saturated zone	  1.00    0.96
203: Vonid	     85   	  Not limited   	:	    Somewhat limited:   Cutbanks cave 		:	       
204: Vonid	   85   	  Not limited   	:	  Somewhat limited:   Cutbanks cave 		:	     
205: Vonid	   85     	•		Cutbanks cave		Slope	    0.04 
206: Vonid	   35 	  Not limited 	 	  Somewhat limited:   Cutbanks cave	:	:	
Karval	   30     	•		Cutbanks cave	1.00	Slope	  1.00  1.00  0.32
Midway	   20           	Slope   Depth to soft   bedrock   Low strength	1.00  1.00 	Depth to soft bedrock Slope Cutbanks cave	1.00	Slope   Droughty	  1.00  1.00  0.92 
207: Vonid	   55 	  Not limited 	i   	  Somewhat limited:   Cutbanks cave	0.10	  Not limited 	 
Midway	   30         	  Very limited:   Depth to soft   bedrock   Low strength   Shrink-swell	  1.00    1.00  0.50	bedrock   Cutbanks cave		  Very limited:   Depth to bedrock   Droughty 	  1.00  0.92   
208: Vonid	     65   	  Somewhat limited:   Slope 	      0.96	:	    0.96  0.10		      0.96
Seldom	   20       	Depth to		Depth to saturated zone			  1.00    0.96

Table 12b.--Building Site Development--Continued

and soil name	Pct. of map	streets	đ	Shallow excavation	ons	Lawns and landsca	ping
	unit     	i 		Rating class and		   Rating class and   limiting features	Value
209: Wages	     85 	      Somewhat limited:	   	      Somewhat limited:	   	    Not limited	       
210: Wages	     85   	Frost action	    0.50  0.04	:	    0.10  0.04	  Somewhat limited:   Slope	    0.04
211: Wages, dry	     85   	•		    Somewhat limited:   Cutbanks cave 	      0.10	    Not limited   	       
212: Wages	   60   	Frost action	    0.50  0.37		:	  Somewhat limited:   Slope	0.37
Karval	   25       	  Somewhat limited:   Slope   	    0.37   	!	    1.00  0.37 		  1.00  0.37  0.32
213: Weld	     85 		      1.00	    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	     
214: Weld, dry	     85 	•	      1.00	    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	     
215: Wiley	     85 	•		    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	     
216: Wiley	     85 	•		    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	 
217: Wilid	     85 	:	:	    Somewhat limited:   Cutbanks cave	      0.10	    Not limited 	 
218: Water	     90 	    Not rated 	     	    Not rated 	     	    Not rated 	     
219: Gravel pits	  100 	  Not rated 	   	  Not rated 	   	  Not rated 	   
220: Access denied	  100 	  Not rated 	   	  Not rated 	   	  Not rated 	

Table 13a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

and soil name	Pct. of map	absorption fiel	ds	Sewage lagoons    -	
	unit   		•	Rating class and limiting features	Value
101: Apishapa, rarely ponded	     90       	•	      1.00    1.00	saturated zone	      1.00    0.01 
102: Arvada	   85     	  Very limited:   Restricted   permeability 	    1.00   	  Somewhat limited:   Slope   	    0.09   
103: Ascalon	   85     	  Not limited   	       	  Very limited:   Seepage   Slope 	    1.00  0.01
104: Ascalon	   85     	  Not limited   	     	  Very limited:   Seepage   Slope	    1.00  0.33
105: Ascalon	   85   	  Not limited 	       	  Very limited:   Seepage   Slope	    1.00  1.00
106: Ascalon, dry	     85   	    Not limited   	       	  Very limited:   Seepage   Slope	      1.00  0.01
107: Ascalon, dry	     85   	    Not limited   	       	    Very limited:   Seepage   Slope	      1.00  0.33
108: Ascalon, dry	     85 	    Not limited   	       	    Very limited:   Seepage   Slope	      1.00  1.00
109: Ascalon	     55   	    Not limited   	       	    Very limited:   Seepage   Slope	      1.00  0.01
Haxtun	   30   	  Very limited:   Restricted   permeability	    1.00 	  Very limited:   Seepage   Slope	    1.00  0.01

Table 13a.--Sanitary Facilities--Continued

and soil name	Pct. of map	absorption fiel	ds	   Sewage lagoons   	ı
	unit   	   Rating class and   limiting features	•	   Rating class and   limiting features	•
110: Ascalon, dry	     55 	    Not limited   	       	    Very limited:   Seepage   Slope	      1.00  0.01
Haxtun, dry	   30   	  Very limited:   Restricted   permeability	    1.00 	  Very limited:   Seepage   Slope	  1.00  0.01
111: Bacid	   85   	  Very limited:   Restricted   permeability	    1.00 	  Not limited 	
112: Bankard, occasionally flooded	       55   	      Very limited:   Flooding   Filtering   capacity	        1.00  1.00		        1.00  1.00  0.01
Glenberg, occasionally flooded	       30     	      Very limited:   Flooding   Filtering   capacity	:	    Very limited:   Flooding   Seepage   Slope	      1.00  1.00  0.01
113: Bijou	   90 	  Very limited:   Filtering   capacity	1.00	  Very limited:   Seepage   Slope	    1.00  0.01
114: Bijou, moist	     90   	  Very limited:   Filtering   capacity 	      1.00	  Very limited:   Seepage   Slope	    1.00  0.01
115: Bijou, moist	   90     	  Very limited:   Filtering   capacity	    1.00 	  Very limited:   Seepage   Slope	  1.00  1.00
116: Blakeland	   85   	  Very limited:   Filtering   capacity	    1.00 	  Very limited:   Seepage   Slope	  1.00  1.00
117: Bresser	   85   	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Seepage   Slope	    1.00  0.09
118: Campo	     85   	    Very limited:   Restricted   permeability 	    1.00 	    Not limited   	

Table 13a.--Sanitary Facilities--Continued

Map symbol and soil name	  Pct.   of		ds	   Sewage lagoons 	
	map				
	unit				
		Rating class and	Value	Rating class and	Value
		limiting features		limiting features	L
	!		ļ		!
119:					!
Canyon	55 	Very limited:   Depth to bedrock	:	Very limited:   Depth to soft	1.00
	 	Slope	11.00	bedrock	1
	i			Slope	1.00
	i	i İ	i		i
Rock outcrop	35	Not rated	į	Not rated	İ
120:					!
Colby	85	Somewhat limited:		Somewhat limited:	
		Restricted	0.50	Seepage	0.50
		permeability	 	Slope	0.01
121:		! 	i	 	¦
Colby	85	Somewhat limited:	i	  Very limited:	i
_	i	Restricted	0.50	:	1.00
	ĺ	permeability	ĺ	Seepage	0.50
					1
122:			l		
Colby	50	Somewhat limited:		Somewhat limited:	
		Restricted	0.50	Seepage	0.50
	 	permeability	l I	Slope	0.09
Weld	   40	  Very limited:	l I	  Somewhat limited:	
		Restricted	1.00	Slope	0.09
	i	permeability	i	İ	i
	į	İ	į		İ
123:					
Firstview	85	Very limited:		Somewhat limited:	
	ļ	Restricted	1.00	Seepage	0.18
		permeability			!
124:	 	l I	l I	l İ	 
Fort Collins	l I 90	  Somewhat limited:	i	  Very limited:	¦
		Restricted	0.68		1.00
	i	permeability	i		i
	İ	İ	İ	İ	į
125:					1
Fort Collins	85	Somewhat limited:	:	Very limited:	
	!	Restricted	0.68		1.00
		permeability	l I	Slope	0.33
126:		I 		 	 
Fort Collins	55	Somewhat limited:	i	  Very limited:	i
	i	Restricted	0.68		1.00
	į	permeability	į	Seepage	1.00
					1
Karval	35	Very limited:	:	Very limited:	!
	!	Filtering	1.00		1.00
		capacity		Seepage	1.00
	I I	Slope 	1.00 	] 	I I
127:	l I	1 	 	1 	l I
Fort Collins	50	  Somewhat limited:		  Very limited:	i
	i	Restricted	0.68	:	1.00
	İ	permeability	İ	Slope	0.09
		I			
Platner	35	Very limited:		Somewhat limited:	
		Restricted	1.00	Slope	0.09
		permeability			
	I	I	I	I	I

Table 13a.--Sanitary Facilities--Continued

and soil name	  Pct.   of  map	absorption fiel	ds	   Sewage lagoons   	
	unit			<u> </u>	
	 	Rating class and   limiting features	•	Rating class and limiting features	Value 
128: Fort Collins	   50 	  Somewhat limited:   Restricted   permeability	    0.68 	  Very limited:   Slope   Seepage	    1.00  1.00
Razor, moist	   40       		1.00	bedrock	    1.00    1.00
129: Fort	     85     	  Very limited:   Restricted   permeability	      1.00 	  Somewhat limited:   Seepage   Slope	    0.50  0.01
130: Fort	   85     	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Seepage   Slope	    0.50  0.33
131: Fort	     55 	  Very limited:   Restricted   permeability	      1.00	  Very limited:   Slope   Seepage	    1.00  0.50
Karval	   35     	  Very limited:   Filtering   capacity   Slope	    1.00    1.00	  Very limited:   Slope   Seepage 	  1.00  1.00
132: Fort	     50 	  Very limited:   Restricted   permeability	      1.00	  Very limited:   Slope   Seepage	    1.00  0.50
Razor	   40       	  Very limited:   Restricted   permeability   Depth to bedrock   Slope	1.00	bedrock   Slope	  1.00    1.00
133: Haversid, rarely flooded	     85     	 	        1.00    0.40	    Somewhat limited:   Flooding   Slope	        0.40  0.01
134: Haverson, rarely flooded	     85     	  -  Very limited:   Restricted   permeability   Flooding	        1.00    0.40	    Somewhat limited:   Flooding   Slope 	        0.40  0.01
135: Haxtun	   85   	  Very limited:   Restricted   permeability	    1.00 	  Very limited:   Seepage   Slope	    1.00  0.01

Table 13a.--Sanitary Facilities--Continued

and soil name	Pct. of map	absorption fiel	ds	   Sewage lagoons   	
	unit   		:	   Rating class and   limiting features	Value
136: Haxtun, dry	     85     	    Very limited:   Restricted   permeability	      1.00 	    Very limited:   Seepage   Slope	      1.00  0.01
137: Haxtun, dry	     55   	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Seepage   Slope	    1.00  0.01
Olney	   30         	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.82	  Very limited:   Seepage   Slope 	    1.00  0.01   
138: Haxtun	     55   	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Seepage   Slope	    1.00  0.01
Olnest	   30   	  Somewhat limited:   Restricted   permeability	    0.68 	  Very limited:   Seepage   Slope	  1.00  0.01
139: Keith	     85   	    Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Seepage   Slope	      0.32  0.01
140: Keith	     85     	  Very limited:   Restricted   permeability	      1.00	  Very limited:   Slope   Seepage	    1.00  0.32
141: Kim	   90     	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Slope 	    0.01 
142: Kim	90     	  Very limited:   Restricted   permeability	    1.00 	  Very limited:   Slope 	    1.00 
143: Kimst	   90     	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Slope 	    0.01 
144: Kimst	     90   	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Slope	1.00

Table 13a.--Sanitary Facilities--Continued

and soil name	Pct. of map	absorption field	ds	Sewage lagoons   	
	unit   	Rating class and limiting features	•		•
145: Las Animas, occasionally flooded	       85       	Flooding   Depth to   saturated zone	          1.00      1.00	Seepage Depth to	        1.00  1.00  1.00
146: Limon, rarely flooded	     85     	Restricted permeability	    1.00    0.40	    Somewhat limited:   Flooding   Slope 	      0.40  0.01
147: Limon, moist, rarely flooded		Restricted permeability	      1.00    0.40	    Somewhat limited:   Flooding   Slope 	      0.40  0.01
148: Manzanola	   85 	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Slope	    0.09 
149: Manzanst, rarely flooded	     90     	Restricted permeability	        1.00    0.40	    Somewhat limited:   Flooding   Slope 	        0.40  0.01
150: Manzanst	     85   	  Very limited:   Restricted   permeability	      1.00 	  Somewhat limited:   Slope 	    0.09 
151: Midway	   85       	  Very limited:   Depth to bedrock 		  Very limited:   Depth to soft   bedrock   Slope	    1.00    0.09
152: Midway, moist	   85       	  Very limited:   Depth to bedrock 	:	  Very limited:   Depth to soft   bedrock   Slope	    1.00    0.09
153: Midway	   55       	  Very limited:   Depth to bedrock   Slope 	:	  Very limited:   Depth to soft   bedrock   Slope	    1.00    1.00

Table 13a.--Sanitary Facilities--Continued

Map symbol and soil name	Pct.	absorption fiel	ds	Sewage lagoons	3
	map	!		 	
	unit   	Rating class and		Rating class and limiting features	•
	İ	İ	İ	İ	İ
153:		[	1		
Razor	30	Very limited:   Restricted	:	Very limited:	1.00
		permeability	1	Depth to soft bedrock	1
	i	Depth to bedrock	1.00	Slope	1.00
	!	Slope	0.16	<u> </u>	ļ
154:		 		İ	
Midway, moist	55	  Very limited:	İ	  Very limited:	
_	i	Depth to bedrock	•	Depth to soft	1.00
		Slope	0.16	bedrock	
				Slope	1.00
Razor, moist	30	  Very limited:	İ	  Very limited:	
•	i	• -		Depth to soft	1.00
		permeability		bedrock	
		Depth to bedrock	:	:	1.00
	l I	Slope 	0.16 	 	l I
155:	i	İ	i	İ	i
Midway	55	• -	'	Very limited:	
		Depth to bedrock	:		1.00
	l I	Slope	1.00 	bedrock   Slope	1
	i		i		
Rock outcrop	30 	Not rated	İ I	Not rated 	 
156:	į	İ	İ	İ	į
Midway, moist	55	• -		Very limited:	
		Depth to bedrock	1.00	:	1.00
	i			Slope	1.00
	[	[	[		1
Rock outcrop, moist-	30	Not rated		Not rated	
157:		 	i	 	
Nunn	85	Not limited	i	Very limited:	i
		<u> </u>		Seepage	1.00
				Slope	0.33
158:		 	i	 	¦
Nunn	55	Not limited	i	Very limited:	į
	!	!		Seepage	1.00
	 	 		Slope 	0.01
Sampson, rarely	i		i	! 	i
flooded	30	Very limited:		Somewhat limited:	
	!	Restricted	1.00		0.40
	l I	permeability Flooding	10.40	Seepage   Slope	0.18
	i				
159:			!		!
Nunn, dry	50 	Not limited	1	Very limited:   Seepage	  1.00
	1			Seepage   Slope	0.01
	İ	İ	İ	l	İ
Sampson, dry, rarely		 		  Gamasahat 3 to 11 3	
flooded	35 	Very limited:   Restricted	  1.00	Somewhat limited:   Flooding	0.40
	İ	permeability		Seepage	0.18
	I	Flooding	0.40	Slope	0.01
	1	I	1	l	1

Table 13a.--Sanitary Facilities--Continued

				·	
and soil name	  Pct.   of  map	absorption field	ds	   Sewage lagoons   	
	unit   			   Rating class and   limiting features	Value
160: Olnest	     85 	    Somewhat limited:		Very limited:	      1.00  0/09
161: Olnest	     85   	    Somewhat limited:   Restricted   permeability	      0.68 	    Very limited:   Seepage   Slope	      1.00  0.01
162: Olnest	     85     	  -  Somewhat limited:   Restricted   permeability	      0.68 	  Very limited:   Seepage   Slope	    1.00  0.33
163: Olnest	   90       	permeability	    0.68    0.04	  Very limited:   Slope   Seepage	    1.00  1.00
164: Olney	   85         	capacity	    1.00    0.82	  Very limited:   Seepage   Slope 	    1.00  0.09   
165: Olney	     85     	  -  Very limited:   Filtering   capacity 	      1.00 	  Very limited:   Seepage   Slope	      1.00  0.01
166: Olney	85     	  Very limited:   Filtering   capacity	    1.00   	  Very limited:   Seepage   Slope	    1.00  0.33
167: Olney	   90       	capacity	    1.00    0.04	  Very limited:   Seepage   Slope 	    1.00  1.00
168: Olney	   55   	  Very limited:   Filtering   capacity	      1.00	  Very limited:   Seepage   Slope	    1.00  1.00
Midway	   30     	  Very limited:   Depth to bedrock   		  Very limited:   Depth to soft   bedrock   Slope	    1.00    1.00
169: Otero	     85     	  Very limited:   Filtering   capacity 	      1.00   	  Very limited:   Seepage   Slope 	      1.00  0.01

Table 13a.--Sanitary Facilities--Continued

and soil name	Pct. of map	absorption fiel	ds	Sewage lagoons   	
	unit	:		<u> </u>	
		Rating class and limiting features		Rating class and limiting features	
		l			
170: Oterodry	   85 	  Not limited 	   	  Very limited:   Seepage	    1.00
		<u> </u>		Slope	0.09
171: Oterodry	     85	    Not limited	   	    Very limited:	   
•			i	Seepage	1.00
		İ		Slope	1.00
172: Platner	     85	    Very limited:	   	    Somewhat limited:	   
	   	Restricted   permeability	1.00 	Slope   	0.01
173:		 		 	İ
Platner	50 I	Very limited:   Restricted	  1.00	Somewhat limited:	  0.01
		permeability		 	
Ascalon	   35	  Not limited	 	  Very limited:	 
	İ	İ	i	Seepage	1.00
	l	<u> </u>	!	Slope	0.01
174: Pleasant, rarely ponded	     90     	  Very limited:   Restricted   permeability   Depth to   saturated zone	      1.00    1.00	  Very limited:   Depth to   saturated zone 	      1.00     
175: Rago, rarely flooded	   00	 	į	Somewhat limited:	į
Rago, larely licoded	30	Restricted	1.00		0.40
		permeability Flooding	  0.40	 	
	 	Flooding		 	
176: Rago, dry, rarely flooded	     90   	    Very limited:   Restricted   permeability   Flooding	      1.00    0.40	    Somewhat limited:   Flooding	      0.40
	 	Flooding		! 	
177:			İ		İ
Razor	85 	Very limited:   Restricted	  1.00	Very limited:   Depth to soft	1.00
	İ	permeability	į <u>.</u>	bedrock	i
		Depth to bedrock	1.00	Slope	0.09
178:	l I	 	l I	 	 
Razor, moist	85	  Very limited:	i	  Very limited:	i
	l	Restricted	1.00		1.00
	l I	permeability Depth to bedrock	  1 00	bedrock   Slope	  0.09
	l I	Debcii to pediock	1 0 0	   probe	10.09

Table 13a.--Sanitary Facilities--Continued

	  Pct.   of	•	ds	   Sewage lagoons 	<b>.</b>
	map	İ			
	unit				
	 	Rating class and   limiting features	:	Rating class and limiting features	•
	!		!		!
179:	ļ		!		ļ
Sampson, rarely			!		!
flooded	90	Very limited:	•	Somewhat limited:	
		Restricted	1.00	Flooding	0.40
	 	permeability   Flooding	  0.40	Seepage	0.18
	l I	Flooding	10.40	 	1
180:	i I	 	i		i
Sampson, dry, rarely	i		i		i
flooded	:	Very limited:	i	Somewhat limited:	i
	i	Restricted	1.00	Flooding	0.40
	İ	permeability	İ	Seepage	0.18
		Flooding	0.40		
					1
181:	!		[		!
Satanta	90	Very limited:	:	Very limited:	
	ļ	Restricted	1.00		1.00
		permeability	!	Slope	0.01
182:	l I	l I	!	[ [	!
Satanta, dry	l I an	  Very limited:	i i	  Very limited:	1
bacanca, ar	1	Restricted	1	Seepage	1.00
	i	permeability		Slope	0.01
	i		i		i
183:	İ	İ	İ		į
Seldom, rarely		[			1
flooded	85	Very limited:		Very limited:	
		Depth to	1.00	Seepage	1.00
	ļ	saturated zone		Depth to	1.00
		Restricted	1.00	saturated zone	
	l I	permeability Flooding	0.40	Flooding   Slope	0.40
	l I	Flooding	10.40	l probe	10.01
184:	i	! [	i	! 	i
Shingle	55	Very limited:	i	  Very limited:	i
	i	Depth to bedrock	:	Depth to soft	1.00
				bedrock	
				Slope	0.67
Midway	30	Very limited:	:	Very limited:	
		Depth to bedrock	11.00	Depth to soft	1.00
	l I	 	!	bedrock   Slope	  0.67
	l I	! 	<u> </u>	biope	1
185:	i	! [	i	! 	i
Shingle, moist	55	Very limited:	i	  Very limited:	i
	İ	Depth to bedrock	1.00	Depth to soft	1.00
				bedrock	
		[		Slope	0.67
			!		
Midway, moist	30	:	:	Very limited:	
	ļ	Depth to bedrock	1.00	Depth to soft	1.00
			1	bedrock	10.05
	I I	I I	 	Slope 	0.67
186:	İ	İ			i
Sundance	85	  Very limited:	i	  Somewhat limited:	i
	İ	Restricted	1.00	Seepage	0.50
			1		10.01
		permeability	I	Slope	0.01

Table 13a.--Sanitary Facilities--Continued

	Pct. of	· -	ds	Sewage lagoons		
	map					
	unit	<u> </u>				
		Rating class and	Value	Rating class and	Value	
	İ	limiting features	<u>i</u>	limiting features	Ĺ	
187: Table Mountain, rarely flooded	       85 	Restricted	        0.68			
	   	permeability   Flooding 	  0.40 	Flooding   	0.40   	
188: Travessilla	   60       	  Very limited:   Depth to bedrock   Slope 	:	:	  1.00    1.00  1.00	
Rock outcrop	   25 	  Not rated 	   	  Not rated 	   	
189: Truckton	   85   	  Very limited:   Filtering   capacity	    1.00 	  Very limited:   Seepage   Slope	    1.00  0.09	
190: Truckton	   85     	  Very limited:   Filtering   capacity 	      1.00	  Very limited:   Seepage   Slope	    1.00  1.00	
191: Truckton, dry	   85     	  Very limited:   Filtering   capacity	•	  Very limited:   Seepage   Slope	    1.00  0.09	
192: Truckton, dry	   85     	  Very limited:   Filtering   capacity	    1.00 	  Very limited:   Seepage   Slope	    1.00  1.00	
193: Valent	85       	  Very limited:   Filtering   capacity   Slope	    1.00    0.63	Slope	    1.00  1.00	
194:	i		İ		i	
Valent	55     	  Very limited:   Filtering   capacity 	  1.00 	Very limited:   Seepage   Slope	  1.00  1.00	
Bijou	30     	  Very limited:   Filtering   capacity 	  1.00 	Very limited:   Seepage   Slope	  1.00  1.00	
195: Valent	   60     	  Very limited:   Filtering   capacity   Slope	    1.00    0.96	  Very limited:   Seepage   Slope	    1.00  1.00	
Vona	   30       	  Very limited:   Filtering   capacity   Slope 	1.00    0.04	Slope	    1.00  1.00 	

Table 13a.--Sanitary Facilities--Continued

Man gymbol	 Ina+	   Continter			
	Pct. of		de	Sewage lagoons	
	map	<u>-</u>	us	 	
	unit	:			
	•	Rating class and	Value	Rating class and	Value
	<u> </u>	limiting features	<u> </u>	limiting features	<u> </u>
196:	l I	 	 	 	
Valent	55	  Very limited:	i	  Very limited:	i
	i	Filtering	1.00		1.00
		capacity	İ	Slope	1.00
	ļ	Slope	0.96		!
Vonid	   35	  Very limited:	 	  Very limited:	
701124	55	Filtering	1.00		1.00
	i	capacity	i	Slope	1.00
	İ	Slope	0.04		į
107.					
197: Vona	   85	  Very limited:		  Very limited:	
	İ	Filtering	1.00		1.00
	İ	capacity	İ	Slope	0.67
198:		1			
Vona	l I 85	  Very limited:	 	  Very limited:	
	i	Filtering	1.00		1.00
	İ	capacity	İ	Slope	0.09
199:					
Vona	l   85	  Very limited:	 	  Very limited:	
	i	Filtering	1.00		1.00
	İ	capacity	į	Slope	1.00
	ļ	Slope	0.04		ļ
200:	l I	 	l I		l I
Vona	35	  Very limited:	i	  Very limited:	i
	ĺ	Filtering	1.00	Seepage	1.00
	ļ	capacity		Slope	1.00
Karval	l I 30	  Very limited:	l I	  Very limited:	 
		Filtering	1.00		1.00
	į	capacity	į	Seepage	1.00
	ļ	Slope	1.00		!
Midway, moist	   20	  Very limited:	 	  Very limited:	 
	i	Depth to bedrock	:	_	1.00
	l	Slope	1.00		
			ļ	Slope	1.00
201:	 	 	l I	[ [	 
Vona	55	  Very limited:		Very limited:	İ
	!	Filtering	1.00		1.00
	 	capacity		Slope	1.00
Midway, moist	30	  Very limited:		  Very limited:	
	İ	Depth to bedrock	1.00	Depth to soft	1.00
	!	<u> </u>		bedrock	!
	 	 	 	Slope 	1.00
202:		 			
Vona	60	Very limited:		Very limited:	
		Filtering	1.00		1.00
	I	capacity		Slope	1.00
	:	Slope	0.96	i	i

Table 13a.--Sanitary Facilities--Continued

and soil name	Pct. of	absorption fiel	ds	Sewage lagoons	5
	map				
	unit				
		Rating class and	Value	Rating class and	Value
		limiting features		limiting features	
202:					1
Seldom	20	Very limited:	•	Very limited:	!
	!	Depth to	1.00	Seepage	1.00
	!	saturated zone		Depth to	1.00
		Restricted permeability	1.00		1
	 	Slope	0.96	Slope 	1
	i			! [	i
203:	i	İ	i		i
Vonid	85	Very limited:	į	Very limited:	İ
		Filtering	1.00	Seepage	1.00
		capacity		Slope	0.67
					1
204:			!		!
Vonid	85	Very limited:	:	Very limited:	
		Filtering	1.00	Seepage	1.00
	 	capacity		Slope	0.09
205:	 	 	!	 	1
Vonid	l I 85	  Verv limited:		  Very limited:	1
		Filtering	•	Seepage	1.00
	i	capacity	i	Slope	1.00
	į	Slope	0.04		İ
					I
206:					I
Vonid	35	Very limited:	•	Very limited:	
	!		1.00	Seepage	1.00
		capacity	!	Slope	1.00
Karval	3U 	  Very limited:		  Very limited:	!
Kai vai	30 		:	Slope	1 1.00
	i	capacity	1	Seepage	11.00
	i	Slope	1.00		i
	ĺ	ĺ	İ		İ
Midway	20	Very limited:		Very limited:	
		Depth to bedrock	1.00		1.00
	!	Slope	1.00		
			!	Slope	1.00
207:	I I	I I	I I	I I	 
Vonid	l I 55	  Very limited:	<u> </u>	  Very limited:	1
		Filtering	1.00		1.00
	į	capacity	į	Slope	1.00
	ĺ	ĺ	İ		İ
Midway	30	Very limited:		Very limited:	1
		Depth to bedrock	1.00	•	1.00
	ļ	<u> </u>	!	bedrock	!
			!	Slope	1.00
208:		l I		 	!
208: Vonid	।   65	  Verv limited:	I I	  Very limited:	l I
		Filtering	1.00	:	1 1.00
	i	capacity	i	Slope	1.00
	İ	Slope	0.96		İ
		I		l	
Seldom	20	Very limited:		Very limited:	
		Depth to	1.00		1.00
	!	saturated zone		Depth to	1.00
	1	Restricted	1.00	•	1
	1	I	1	d1	
		permeability Slope	  0.96	Slope 	1.00

Table 13a.--Sanitary Facilities--Continued

and soil name	  Pct.   of  map	absorption fiel	ds	   Sewage lagoons   	ıs			
	unit   		•	Rating class and limiting features				
209: Wages	     85   	    Very limited:   Restricted   permeability	      1.00 	    Somewhat limited:   Slope   Seepage	      0.33  0.18			
210: Wages	   85       	  Very limited:   Restricted   permeability   Slope	    1.00    0.04	  Very limited:   Slope   Seepage 	    1.00  0.18 			
211: Wages, dry	   85   	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Seepage   Slope	    0.18  0.09			
212: Wages	     60   	  Very limited:   Restricted   permeability   Slope	    1.00    0.37	Seepage	    1.00  0.18			
Karval	   25     	  Very limited:   Filtering   capacity   Slope	    1.00    0.37	  Very limited:   Seepage   Slope 	  1.00  1.00			
213: Weld	     85     	    Very limited:   Restricted   permeability	      1.00 	    Not limited   	       			
214: Weld, dry	   85     	  Very limited:   Restricted   permeability	      1.00	  Not limited  - 	       			
215: Wiley	     85   	    Very limited:   Restricted   permeability	      1.00 	    Somewhat limited:   Seepage   Slope 	    0.32  0.01			
216: Wiley	85 85		    1.00	  Very limited:   Slope   Seepage	  1.00  0.32			
217: Wilid	   85     	  Not limited   	;         	  Very limited:   Seepage   Slope	  1.00  0.01			
218: Water	   90 	  Not rated 	   	  Not rated 	 			
219: Gravel pits	  100 	  Not rated 	   	  Not rated 	   			
220: Access denied	  100 	  Not rated 	   	  Not rated 	   			

## Table 13b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

and soil name	Pct. of map	landfill	У	Area sanitary		Daily cover fo	or
	unit   		:	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
101: Apishapa, rarely ponded	       90     	    Very limited:   Depth to   saturated zone	 	Very limited: Depth to saturated zone	          1.00     	   Very limited:   Depth to   saturated zone   Too clayey   Hard to compact	      1.00    1.00
102: Arvada	     85   	    Not limited   	     	    Not limited   	       	    Very limited:   Hard to compact	    1.00
103: Ascalon	     85   	    Not limited   	     	    Not limited   	     	    Somewhat limited:   Seepage	    0.21
104: Ascalon	     85 	    Not limited   	     	    Not limited 	     	    Somewhat limited:   Seepage	    0.21
105: Ascalon	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	    0.21
106: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	0.21
107: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	0.21
108: Ascalon, dry	     85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	
109: Ascalon	     55 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	
Haxtun	   30 	  Not limited 	   	  Not limited 	   	  Not limited 	   
110: Ascalon, dry	     55 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	0.21
Haxtun, dry	   30 	  Not limited 	   	  Not limited 	   	  Not limited 	   
111: Bacid	     85 	  Not limited 	   	    Not limited 	     	    Not limited 	     

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. of map unit	landfill	У	Area sanitary   landfill 		Daily cover fo	or
	   		Value	Rating class and   limiting features		Rating class and   limiting features	Value
112: Bankard, occasionally flooded	         55   	Flooding	          1.00	      Very limited:   Flooding 	          1.00	      Very limited:   Seepage   Too sandy	        1.00  0.50
Glenberg, occasionally flooded	     30   	Flooding	      1.00  1.00	  -  Very limited:   Flooding  -	        1.00	 	      1.00  0.50
113: Bijou	     90 	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Seepage	0.21
114: Bijou, moist	     90 	    Not limited   	     	    Not limited   	     	    Somewhat limited:   Seepage	0.21
115: Bijou, moist	     90 	    Not limited   	     	    Not limited   	     	    Somewhat limited:   Seepage	      0.21
116: Blakeland	     85     	Seepage	    1.00  1.00	  Very limited:   Seepage 	      1.00	  Very limited:   Seepage   Too sandy	    1.00  0.50
117: Bresser	   85   		      1.00	  Not limited 	       	  Very limited:   Seepage   Too sandy	    1.00  0.50
118: Campo	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
119: Canyon	   55   	Depth to bedrock		  Very limited:   Slope 	    1.00	  Very limited:   Depth to bedrock   Slope	    1.00  1.00
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	
120: Colby	     85	  Not limited 	 	  Not limited 	 	    Not limited 	İ I
121: Colby	   85 	    Not limited 	 	    Not limited 	; [ [	  Not limited 	į Į
122: Colby	   50	  Not limited 	   	    Not limited 	   	    Not limited 	 
Weld	40	  Not limited 	   	  Not limited 	   	  Not limited 	   
123: Firstview	   85 		    1.00	  Not limited 	 	  Somewhat limited:   Too sandy	    0.50

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. of map unit	landfill	У	Area sanitary   landfill 		Daily cover fo   landfill 	or
	   			Rating class and		Rating class and	Value
124: Fort Collins	     90 	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Seepage	      0.21
125: Fort Collins	     85   	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Seepage 	      0.21
126: Fort Collins	     55 	  Not limited 	     	    Not limited 	 	  Somewhat limited:   Seepage	0.21
Karval	   35       	Too sandy	    1.00  1.00 	  Very limited:   Slope     	    1.00   		  1.00  1.00  1.00  0.01
127: Fort Collins	     50 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	      0.21
Platner	   35 	  Not limited	   	  Not limited	   	  Not limited	
128: Fort Collins	     50	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	      0.21
Razor, moist	   40     	Depth to bedrock	:	  Somewhat limited:   Slope   	    0.16   		  1.00  1.00  0.16
129: Fort	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	 
130: Fort	   85 	  Not limited 	   	  Not limited 	; [ [	  Not limited 	İ I I
131: Fort	   55	  Not limited	i I	  Not limited	i I	  Not limited	İ İ
Karval	   35       	Too sandy	    1.00  1.00 	  Very limited:   Slope     	    1.00     	Seepage   Slope	  1.00  1.00  1.00  0.01
132: Fort	     50	    Not limited	   	    Not limited	   	    Not limited	 
Razor	   40     	Depth to bedrock		• -		  Very limited:   Depth to bedrock   Hard to compact   Slope	
133: Haversid, rarely flooded	       85 	:	        0.40	      Somewhat limited:   Flooding	        0.40	      Not limited 	

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. of map	landfill	Y	   Area sanitary   landfill 		Daily cover fo	
	   	Rating class and limiting features		Rating class and limiting features		•	
134: Haverson, rarely flooded	       85 	      Somewhat limited:   Flooding		      Somewhat limited:   Flooding	        0.40	      Not limited 	         
135: Haxtun	     85 	  Not limited 	   	  Not limited 	   	  Not limited 	   
136: Haxtun, dry	   85 	  Not limited 	   	  Not limited 	 	  Not limited 	   
137: Haxtun, dry	   55 	  Not limited 	   	  Not limited 	 	  Not limited 	   
Olney	30 30	Not limited	i I	Not limited	i I	Not limited	i I
138: Haxtun	   55 	  Not limited 	   	  Not limited 	   	  Not limited 	   
Olnest	30 	Not limited 	 	Not limited 	 	Not limited 	 
139: Keith	   85 	  Not limited	   	  Not limited	   	  Not limited	   
140: Keith	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
141: Kim	     90	    Not limited 	     	    Not limited 	     	    Not limited 	   
142: Kim	     90 	    Not limited 	;   	    Not limited 	;   	    Not limited 	     
143: Kimst	     90 	    Not limited 	;   	    Not limited 	;   	    Not limited 	     
144: Kimst	     90 	  Not limited 	;     	  Not limited 	;   	  Not limited 	   
145: Las Animas, occasionally flooded	     85   	Flooding   Depth to   saturated zone	1.00	Depth to saturated zone	      1.00  1.00 	Depth to saturated zone	        1.00  0.86
146: Limon, rarely flooded	       85 	:	        0.40	    Somewhat limited:   Flooding	        0.40	      Very limited:   Hard to compact 	        1.00
147: Limon, moist, rarely flooded	•	:	        0.40	      Somewhat limited:   Flooding	        0.40	      Very limited:   Hard to compact	        1.00
148: Manzanola	     85 	  Not limited 	     	    Not limited 	     	    Not limited 	     

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. of map	landfill	У	   Area sanitary   landfill 		   Daily cover fo   landfill	or
	unit   		:	   Rating class and   limiting features		Rating class and limiting features	'
149: Manzanst, rarely flooded	       90 	•	        0.40	      Somewhat limited:   Flooding	        0.40	      Not limited   	
150: Manzanst	   85 	  Not limited 	 	  Not limited 	 	    Not limited 	i   
151: Midway	   85 	  Very limited:   Depth to bedrock	:	  Not limited 	     	  Very limited:   Depth to bedrock	    1.00
152: Midway, moist	     85 	  Very limited:   Depth to bedrock 		    Not limited   	       	  Very limited:   Depth to bedrock 	    1.00
153: Midway	   55   	Depth to bedrock			    0.16 	  Very limited:   Depth to bedrock   Slope	  1.00  0.16
Razor	   30       	Depth to bedrock	:		    0.16     	  Very limited:   Depth to bedrock   Hard to compact   Slope	:
154: Midway, moist	   55   	Depth to bedrock	:		      0.16 	  Very limited:   Depth to bedrock   Slope	    1.00  0.16
Razor, moist	   30     	Depth to bedrock	:		  0.16     	   Very limited:   Depth to bedrock   Hard to compact   Slope	:
155: Midway	     55   	Depth to bedrock			      1.00	  Very limited:   Depth to bedrock   Slope	    1.00  1.00
Rock outcrop	   30 	  Not rated 	!   	  Not rated 	!   	  Not rated 	   
156: Midway, moist	   55   	Depth to bedrock			      1.00	  Very limited:   Depth to bedrock   Slope	    1.00  1.00
Rock outcrop, moist-	   30 	  Not rated 	!   	  Not rated 	!   	  Not rated 	   
157: Nunn	   85 	  Not limited   	       	  Not limited   	       	  Somewhat limited:   Seepage 	    0.15
158: Nunn	   55   	  Not limited   	     	  Not limited   	     	  Somewhat limited:   Seepage	    0.15

Table 13b.--Sanitary Facilities--Continued

and soil name	  Pct.   of  map  unit	landfill	У	   Area sanitary   landfill 		   Daily cover fo   landfill 	r
	unii c   			Rating class and   limiting features		Rating class and	
158: Sampson, rarely flooded	       30   	Too clayey	        0.50  0.40		        0.40	      Somewhat limited:   Too clayey 	        0.50
159: Nunn, dry	     50 	    Not limited   	     	    Not limited   	     	    Somewhat limited:   Seepage	0.15
Sampson, dry, rarely flooded	•	Too clayey	      0.50  0.40	· -	      0.40 	  Somewhat limited:   Too clayey 	    0.50
160: Olnest	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
161: Olnest	   85 	  Not limited 	 	  Not limited 	 	  Not limited 	   
162: Olnest	   85 	  Not limited 	   	  Not limited 	   	  Not limited 	   
163: Olnest	   90 	:	    0.04 	  Somewhat limited:   Slope 	    0.04 	  Somewhat limited:   Slope 	    0.04 
164: Olney	   85 	    Not limited 	;   	  Not limited 	;   	  Not limited 	     
165: Olney	   85   		    1.00 	  Not limited   	     	  Very limited:   Seepage   Too sandy	    1.00  0.50
166: Olney	     85 		      1.00	    Not limited   	       	  Very limited:   Seepage   Too sandy	    1.00  0.50
167: Olney	     90   	Too sandy	    1.00  0.04		      0.04 	  Very limited:   Seepage   Too sandy   Slope	    1.00  0.50  0.04
168: Olney	     55   		      1.00	    Not limited   	       	    Very limited:   Seepage   Too sandy	      1.00  0.50
Midway	   30 	  Very limited:   Depth to bedrock		  Not limited 	   	  Very limited:   Depth to bedrock	    1.00
169: Otero	     85   	    Not limited   	       	    Not limited   	       	    Very limited:   Seepage 	      1.00

Table 13b.--Sanitary Facilities--Continued

and soil name	  Pct.   of  map	landfill	У	   Area sanitary   landfill		   Daily cover fo   landfill	r
	unit   			   Rating class and   limiting features	•	   Rating class and   limiting features	
170: Oterodry	     85 	    Not limited 	       	    Not limited 	     	    Somewhat limited:   Seepage	      0.50
171: Oterodry	   85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	0.50
172: Platner	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
173: Platner	   50 	  Not limited 	 	  Not limited 	 	  Not limited 	   
Ascalon	35   	Not limited   	   	Not limited   	   	Somewhat limited:   Seepage 	  0.21 
174: Pleasant, rarely ponded	   90       	Depth to saturated zone	      1.00    1.00	  Very limited:   Depth to   saturated zone 	      1.00     	saturated zone Too clayey	    1.00    1.00  1.00
175: Rago, rarely flooded	   90     	Too clayey	      1.00  0.40	  Somewhat limited:   Flooding 	      0.40 	  Very limited:   Too clayey 	      1.00
176: Rago, dry, rarely flooded	   90   	Too clayey	      1.00  0.40	:	        0.40 	    Very limited:   Too clayey 	        1.00
177: Razor	   85   	  Very limited:   Depth to bedrock	:	  Not limited 	       	  Very limited:   Depth to bedrock   Hard to compact	:
178: Razor, moist	     85   	  Very limited:   Depth to bedrock	:	  Not limited 	       	  Very limited:   Depth to bedrock   Hard to compact	:
179: Sampson, rarely flooded	     90   	Too clayey	      0.50  0.40	    Somewhat limited:   Flooding 	        0.40	    Somewhat limited:   Too clayey 	        0.50
180: Sampson, dry, rarely flooded		Too clayey	        0.50  0.40	· -	        0.40	    Somewhat limited:   Too clayey	        0.50
181: Satanta	     90 	    Not limited   	       	    Not limited   	       	  Somewhat limited:   Seepage 	      0.50

Table 13b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map	landfill	У	   Area sanitary   landfill 		   Daily cover fo   landfill 	r
	unit   			Rating class and   limiting features	•	Rating class and   limiting features	Value
182: Satanta, dry	     90 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	      0.50
183: Seldom, rarely flooded	     85       	Depth to saturated zone	      1.00    0.40	saturated zone Seepage	      1.00    1.00  0.40	  -  Very limited:   Depth to   saturated zone   Seepage 	      1.00    0.21
184: Shingle	     55 	  Very limited:   Depth to bedrock		  Not limited 	     	  Very limited:   Depth to bedrock	1.00
Midway	   30 	  Very limited:   Depth to bedrock	:	  Not limited   	   	  Very limited:   Depth to bedrock	1   1.00
185: Shingle, moist	     55 	  Very limited:   Depth to bedrock	:	    Not limited   	     	    Very limited:   Depth to bedrock	1.00
Midway, moist	30   	  Very limited:   Depth to bedrock	:	  Not limited   	     	  Very limited:   Depth to bedrock	1.00
186: Sundance	     85 	    Not limited 	   	    Not limited 	   	    Not limited 	     
187: Table Mountain, rarely flooded	       85 	    Somewhat limited:   Flooding	        0.40	    Somewhat limited:   Flooding	        0.40	    Not limited 	     
188: Travessilla	   60     	Depth to bedrock	:	  Very limited:   Slope   	      1.00 	Slope	    1.00  1.00  0.21
Rock outcrop	   25 	  Not rated 	   	  Not rated 	   	  Not rated 	   
189: Truckton	   85     		    1.00 	  Not limited     	     	  Very limited:   Seepage   Too sandy	    1.00  0.50
190: Truckton	   85     		      1.00 	    Not limited   	       		    1.00  0.50
191: Truckton, dry	   85     		      1.00 	  Not limited   	       	  Very limited:   Seepage   Too sandy	    1.00  0.50
192: Truckton, dry	   85     	•	      1.00   	  Not limited     	       	  Very limited:   Seepage   Too sandy 	    1.00  0.50

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. Trench sanitary		   Area sanitary   landfill 		   Daily cover fo   landfill 	or	
	unite   			Rating class and limiting features		Rating class and limiting features	Value
193: Valent	     85   	Too sandy	      1.00  0.63	•	      0.63	    Very limited:   Too sandy   Seepage   Slope	    1.00  1.00  0.63
194: Valent	     55   	• -	      1.00	    Not limited   	       	    Very limited:   Too sandy   Seepage	      1.00  1.00
Bijou	   30 	  Not limited 	   	  Not limited 	   	  Somewhat limited:   Seepage	    0.21
195: Valent	     60   	Too sandy	      1.00  0.96		      0.96   	  Very limited:   Too sandy   Seepage   Slope	    1.00  1.00  0.96
Vona	   30     		    1.00  0.04	•	    0.04   	  Very limited:   Seepage   Too sandy   Slope	  1.00  0.50  0.04
196: Valent	     55   	Too sandy	      1.00  0.96		      0.96 	    Very limited:   Too sandy   Seepage   Slope	    1.00  1.00
Vonid	   35 	•	    0.04	  Somewhat limited:   Slope 	      0.04	  Somewhat limited:	    0.50  0.04
197: Vona	     85   	    Very limited:   Too sandy 	      1.00	    Not limited   	       	    Very limited:   Seepage   Too sandy	      1.00  0.50
198: Vona	     85   	•	      1.00	  Not limited   	       	  Very limited:   Seepage   Too sandy	    1.00  0.50
199: Vona	   85       	Too sandy	    1.00  0.04	•	    0.04   	  Very limited:   Seepage   Too sandy   Slope	    1.00  0.50  0.04
200: Vona	   35 	  Very limited:   Too sandy 	      1.00	    Not limited   	     	  Very limited:   Seepage   Too sandy	    1.00  0.50
Karval	   30       		  1.00  1.00 		    1.00     	  Very limited:   Too sandy   Seepage   Slope   Gravel content	  1.00  1.00  1.00  0.01

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. of map unit	landfill	У	Area sanitary   landfill 		Daily cover fo   landfill 	or
	   			Rating class and limiting features		   Rating class and   limiting features	
200: Midway, moist	     20 	Depth to bedrock		    Very limited:   Slope 	      1.00	    Very limited:   Depth to bedrock   Slope	      1.00
201: Vona	     55		      1.00	    Not limited 	   	    Very limited:   Seepage	      1.00
Midway, moist	       30	    Very limited:	 	      Not limited	     	Too sandy    Very limited:	0.50
202:	   	Depth to bedrock   	1.00   	 	   	Depth to bedrock   	1.00   
Vona	60     	Too sandy	  1.00  0.96	Somewhat limited:   Slope 	  0.96   	Very limited:   Seepage   Slope   Too sandy	  1.00  0.96  0.50
Seldom	   20       	Depth to saturated zone	    1.00    0.96	saturated zone Seepage	  1.00    1.00  0.96	saturated zone	  1.00    0.96  0.21
203: Vonid	     85 	    Not limited   	       	    Not limited   	       	    Somewhat limited:   Seepage	      0.50
204: Vonid	   85 	    Not limited 	     	    Not limited 	     	    Somewhat limited:   Seepage	0.50
205: Vonid	   85   	  Somewhat limited:   Slope 	    0.04 	  Somewhat limited:   Slope 	    0.04 	  Somewhat limited:   Seepage   Slope	    0.50  0.04
206: Vonid	   35 	    Not limited 	 	    Not limited 	 	    Somewhat limited:   Seepage	0.50
Karval	   30       	Too sandy	    1.00  1.00 	  Very limited:   Slope     	    1.00     	Seepage   Slope	  1.00  1.00  1.00  0.01
Midway	   20     	Depth to bedrock		  Very limited:   Slope   	    1.00 	  Very limited:   Depth to bedrock   Slope 	    1.00  1.00
207: Vonid	   55 	  Not limited 	 	  Not limited 	 	  Somewhat limited:   Seepage	    0.50
Midway	   30 	  Very limited:   Depth to bedrock		  Not limited   	     	  Very limited:   Depth to bedrock	    1.00

Table 13b.--Sanitary Facilities--Continued

and soil name	Pct. of map	landfill	У	Area sanitary		Daily cover fo	or
	unit   	Rating class and		   Rating class and   limiting features	•		•
208: Vonid	     65   	:	      0.96	    Somewhat limited:   Slope 	      0.96	    Somewhat limited:   Slope   Seepage	      0.96  0.50
Seldom	   20       	Depth to saturated zone	1.00	saturated zone Seepage	1.00	  Very limited:   Depth to   saturated zone   Slope	  1.00    0.96  0.21
209: Wages	     85	    Not limited 	   	    Not limited 	   	    Not limited 	   
210: Wages	     85   	•	      0.04	    Somewhat limited:   Slope 	      0.04	    Somewhat limited:   Slope 	      0.04
211: Wages, dry	     85	    Not limited 	     	    Not limited 	   	    Not limited 	     
212: Wages	     60 	:	      0.37	    Somewhat limited:   Slope	      0.37	    Somewhat limited:   Slope	      0.37
Karval	   25       	Too sandy	  1.00  0.37 	:	    0.37     	  Very limited:   Too sandy   Seepage   Slope   Gravel content	  1.00  1.00  0.37  0.01
213: Weld	     85	    Not limited	   	    Not limited	   	    Not limited	   
214: Weld, dry	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	     
215: Wiley	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	   
216: Wiley	   85 	  Not limited 	;   	  Not limited 	;     	  Not limited 	     
217: Wilid	   85 	  Not limited 	i   	  Not limited 	 	  Somewhat limited:   Seepage	0.21
218: Water	     90 	    Not rated 	     	    Not rated 	     	    Not rated 	     
219: Gravel pits	    100 	    Not rated 	     	    Not rated 	     	    Not rated 	     
220: Access denied	    100	  Not rated 	   	    Not rated 	   	    Not rated 	     

Table 14a.--Agricultural Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

:	processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
 	Rating class and limiting features	Value 	Rating class and limiting features	Value 	Rating class and limiting features	Value
       90	• -					        1.00
           	Restricted   permeability   pepth to   saturated zone   Runoff   Salinity	  1.00    1.00    0.40  0.01	Restricted   permeability   Depth to   saturated zone 	    1.00       	kestricted   permeability   Depth to   saturated zone 	  1.00    1.00
		į		į		į
85         	Restricted   permeability   Sodium content   Runoff   Salinity	1.00    1.00	Restricted permeability Sodium content	  1.00    1.00 	Restricted   Restricted   permeability   Sodium content	  1.00    1.00 
   85   	Somewhat limited:   Filtering   capacity	0.01	Somewhat limited:   Filtering   capacity	  0.01 	Somewhat limited:   Filtering   capacity	  0.01 
   85         	  Somewhat limited:   Filtering   capacity 	    0.01     	  Somewhat limited:   Filtering   capacity 	    0.01     	  Somewhat limited:   Too steep for   surface   application   Filtering   capacity	  0.08    0.01
   85             	  Somewhat limited:   Filtering   capacity     	    0.01         	  Somewhat limited:   Filtering   capacity   	    0.01           	Somewhat limited:   Too steep for surface application Too steep for sprinkler application Filtering capacity	  0.91    0.02      0.01
     85     	  Somewhat limited:   Filtering   capacity		•		•	      0.01 
   85       	  Somewhat limited:   Filtering   capacity 		•		Too steep for surface application	  0.08      0.01
	map   unit	map   processing was   unit	map	map processing waste unit	map processing waste unit Rating class and lamiting features limiting features limiting features limiting features limiting features limiting features limiting permeability leads feature limiting limiting features limiting featu	Maxing class and   Value   Rating class and   Initing features   Ini

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map	manure and food	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	n
	unit	i		<u>.</u>		<u> </u>	
	 	Rating class and   limiting features	Value	Rating class and   limiting features	Value	Rating class and   limiting features	Value
		İ	İ	İ	İ	İ	i
108:							
Ascalon, dry	85 	Somewhat limited:   Filtering	  0.01	Somewhat limited:   Filtering	  0.01	Somewhat limited:   Too steep for	0.91
	İ	capacity		capacity		surface	
j	l	ĺ	Ì	ĺ	Ì	application	Ì
						Too steep for	0.02
	l I	 	 	 	 	sprinkler   application	l I
	İ	İ	i	İ	i	Filtering	0.01
!		!	!	!	!	capacity	!
109:	l i	 		 		 	
Ascalon	   55	  Somewhat limited:	i	  Somewhat limited:	İ	  Somewhat limited:	i
j	ĺ	Filtering	0.01	Filtering	0.01	Filtering	0.01
		capacity		capacity		capacity	
Haxtun	l I 30	  Verv limited:	 	  Very limited:	 	  Very limited:	l I
		Filtering	1.00		1.00		1.00
j	l	capacity	Ì	capacity	Ì	capacity	Ì
		Restricted	1.00	Restricted	0.96	Restricted	0.96
	l I	permeability	 	permeability	 	permeability	
110:	İ	į	i	İ	i	İ	i
Ascalon, dry	55	:		Somewhat limited:		Somewhat limited:	
	l I	Filtering   capacity	0.01	Filtering   capacity	0.01	Filtering   capacity	0.01
		capacity	İ	capacity	İ		i
Haxtun, dry	30	Very limited:	Ì	Very limited:	Ì	Very limited:	Ì
		Filtering	1.00	!	1.00		1.00
	l I	capacity Restricted	1	capacity Restricted	  0.96	capacity Restricted	10.96
	İ	permeability		permeability		permeability	
	l	<u> </u>	!	<u> </u>		<u> </u>	ļ
111:   Bacid	   85	  Very limited:	 	  Very limited:	 	  Very limited:	
24024	33	Restricted	1.00	Restricted	1.00	Restricted	1.00
		permeability	[	permeability		permeability	[
112:				 			
Bankard,	 	! 		 		 	
occasionally	İ	İ	i	İ	į	İ	i
flooded	55	Very limited:		Very limited:		Very limited:	
	l I	Filtering   capacity	1.00	Filtering   capacity	1.00	Filtering   capacity	1.00
	 	Flooding	1.00	Flooding	1.00	Droughty	0.89
j	İ	Droughty	0.89	Droughty	0.89	Flooding	0.60
		Leaching	0.45				
Glenberg,	l I	 	 	 	 	 	l I
occasionally	İ	İ	i	' 	i	' 	i
flooded	30	Very limited:	•	Very limited:	:	Very limited:	
	l I	Filtering   capacity	1.00	Filtering   capacity	1.00	Filtering   capacity	1.00
	l I	Capacity   Flooding	1.00	Capacity   Flooding	1.00	Capacity   Flooding	0.60
	İ	Droughty	0.01	Droughty	0.01	Droughty	0.01
		i .	1	I	1	I	1
113:	   an	  Very limited:	i	  Very limited:	i	  Very limited:	i
113:     Bijou	   90 	  Very limited:   Filtering	1	  Very limited:   Filtering	    1.00	  Very limited:   Filtering	1.00
	   90   	•	•	•	•	•	  1.00 

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food	-	Application   of sewage sludg   	re	Disposal of wastewater by irrigation	ı
	 	Rating class and limiting features	Value 	Rating class and limiting features	Value	Rating class and limiting features	Value
	ļ.	!	ļ.	!	!	!	!
114: Bijou, moist	   90   	Filtering   capacity	    1.00    0.03	capacity	1.00	  Very limited:   Filtering   capacity   Droughty	
	 	Droughty 		Droughty 	0.03	Droughty	0.03
115: Bijou, moist	   90 	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00
	     	capacity   Droughty   	  0.03   	capacity   Droughty   	0.03	Too steep for surface application	  1.00   
	       	       	     	       	     	Too steep for sprinkler application Droughty	0.10      0.03
116: Blakeland	   85 	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00
	       	Droughty   Leaching   	0.65  0.45   	Droughty     	0.65       	Too steep for surface application Droughty Too steep for	1.00      0.65  0.10
	   	 	     	 	 	sprinkler   application	
117: Bresser	   85   	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00
	 	Droughty 	0.30	Droughty 	0.30 	Droughty 	0.30 
118: Campo	   85   	  Very limited:   Restricted   permeability	    1.00	  Somewhat limited:   Restricted   permeability	    0.96	  Somewhat limited:   Restricted   permeability	    0.96
119:		! 	i	! 		! 	
Canyon	55   	Droughty Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	:
	   	Slope   Restricted   permeability	1.00  1.00 	Restricted permeability	1.00  0.96 	surface application	1.00
	   	Runoff   	0.40	Filtering   capacity 	0.01	sprinkler application	1.00
	! 				!	Restricted   permeability	0.96 
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	   
120: Colby	   85 	  Not limited 	   	  Not limited 	   	  Not limited 	   

Table 14a.--Agricultural Waste Management--Continued

	Pct. of map	manure and food	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	ı
	unit			İ		İ	
		Rating class and	Value	Rating class and	Value	Rating class and	Value
	<u> </u>	limiting features	<u> </u>	limiting features		limiting features	
121:	l I	 	 	 	 	 	1
Colby	   85     	  Not limited     	       	  Not limited     	       	Very limited:   Too steep for   surface   application	  1.00 
	     	 	     	 	     	Too steep for sprinkler application	0.10
122:				l		l	
Colby	50	Not limited		Not limited		Not limited	
Weld	   40     	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Restricted   permeability	    0.96 	  Somewhat limited:   Restricted   permeability	    0.96 
123:	i	! 	i	! 		! 	i
Firstview	85   	permeability	1.00	Very limited:   Restricted   permeability	1.00	permeability	1.00
	   	Salinity	1.00  0.01  0.01	:	1.00  0.01	Sodium content Filtering capacity	1.00  0.01
	   	capacity			   		   
124:	i	į	İ	İ	i	İ	i
Fort Collins	90			Somewhat limited:	:	Somewhat limited:	
		Restricted   permeability	1.00	Restricted   permeability	0.96 	Restricted   permeability	0.96
125:	i i	 	 	 	 	 	
Fort Collins	85	• -		Somewhat limited:		Somewhat limited:	İ
		Restricted   permeability	1.00	Restricted permeability	0.96	Restricted	0.96
	i i	permeability	 	permeability	 	permeability Too steep for	0.08
	;   	 	;   	 	 	surface application	
	İ	İ	İ	İ	İ	İ	İ
126: Fort Collins	   55	  Very limited:	 	  Somewhat limited:	 	  Very limited:	
1010 00111115			1.00	Restricted	0.96	Too steep for	1.00
	 	permeability 	 	permeability 	 	surface application	 
	!	ļ		<u> </u>		Restricted	0.96
		 		 		permeability Too steep for	0.10
		 		 	 	sprinkler application	
Karval	35	  Very limited:		  Very limited:		  Very limited:	1
	i I	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
		•	1.00	Droughty	1.00	Too steep for	1.00
			1.00		1.00	•	
	I I	•	0.45	Too acid 	0.42 	application Droughty	1.00
	 			 	   	Too steep for sprinkler	1.00
	l I	 	l I	 	 	application Too acid	0.42
	i		i	' 	i		

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food processing was	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	n
	 	Rating class and limiting features	Value	Rating class and limiting features	:	Rating class and limiting features	Value
127: Fort Collins	     50 	    Very limited:   Restricted   permeability	      1.00	    Somewhat limited:   Restricted   permeability	      0.96	    Somewhat limited:   Restricted   permeability	      0.96
Platner	   35     	  Very limited:   Restricted   permeability 	    1.00   	  Somewhat limited:   Restricted   permeability	    0.96   	  Somewhat limited:   Restricted   permeability	    0.96   
128: Fort Collins	   50             	  Very limited:   Restricted   permeability   	    1.00             	  Somewhat limited:   Restricted   permeability   	  0.96             	Very limited:   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler   application	  1.00      0.96    0.10
Razor, moist	   40               	Restricted permeability Depth to bedrock Droughty Slope	1.00 	Droughty   Slope	1.00 	surface	  1.00    1.00    0.42  0.39   
129: Fort	   85           	•	      1.00    0.50  0.01	  Somewhat limited:   Restricted   permeability   Sodium content   Filtering   capacity	      0.96    0.50  0.01	  Somewhat limited:   Restricted   permeability   Sodium content   Filtering   capacity	    0.96    0.50  0.01
130: Fort	   85           	permeability Sodium content	    1.00    0.50  0.01 	permeability Sodium content	    0.96    0.50  0.01   	permeability Sodium content	  0.96    0.50  0.08   

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct.	manure and food	-	Application of sewage sludg	e	Disposal of wastewater	
	map  unit	processing was	te 	<u> </u>		by irrigation	ı 
	 	Rating class and limiting features	Value 	Rating class and limiting features		Rating class and limiting features	Value
131:	 	 	 	 	 	 	
Fort	55     	Very limited:   Restricted   permeability   Sodium content	  1.00    0.50	Somewhat limited:   Restricted   permeability   Sodium content	  0.96    0.50	Very limited:   Too steep for   surface   application	  1.00 
	  -	Filtering   capacity	0.01	Filtering   capacity	0.01	Restricted permeability	0.96
	       	 	       	 	       	Sodium content Too steep for sprinkler application Filtering	0.50  0.10        0.01
	 	 	 	 		capacity	 
Karval	33	Very limited:   Filtering   capacity   Droughty	  1.00    1.00	Very limited:   Filtering   capacity   Droughty	  1.00    1.00	Very limited:   Filtering   capacity   Too steep for	  1.00    1.00
	   		1.00  0.45  0.11	Slope   Too acid 	1.00  0.42 	surface application Droughty	    1.00
	   	 	   	 	   	Too steep for sprinkler application	1.00
132:	   	   	   	   	   	Too acid   	0.42   
Fort	50     	Very limited:   Restricted   permeability   Sodium content	  1.00    0.50	Somewhat limited:   Restricted   permeability   Sodium content	  0.96    0.50	Very limited:   Too steep for   surface   application	  1.00 
	     	Filtering   capacity 	0.01	Filtering   capacity 	0.01	Restricted permeability Sodium content	0.96
	     	 	     	 	     	Too steep for sprinkler application Filtering	0.10      0.01
	 	   	i I	 	i I	capacity	i I
Razor	40   	Very limited:   Restricted   permeability	  1.00 	Very limited:   Restricted   permeability	  1.00 	Very limited:   Restricted   permeability	  1.00 
	   		0.42  0.32  0.16	Droughty	0.42  0.32  0.16	surface	1.00   
	       	Sodium content     	0.08       	Sodium content       	0.08       	Depth to bedrock Too steep for sprinkler application Droughty	0.42  0.39      0.32
133: Haversid, rarely	       0=	           	   	 	   	  -  -	   
flooded	   	Restricted permeability	  1.00    0.40	permeability	  0.96    0.40	permeability	  0.96    0.08
	   	•	0.08  0.01	•	0.08   	 	   

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food	l-	Application of sewage sludg	e	Disposal of wastewater by irrigation	ı
	 		:	Rating class and limiting features	•		
134: Haverson, rarely flooded	     85       	    Very limited:   Restricted   permeability   Flooding   Salinity	      1.00    0.40  0.06	permeability Flooding	        0.96    0.40	    Somewhat limited:   Restricted   permeability   	        0.96     
135:	 	 	i	 	 	 	
Haxtun	   85         	Very limited:   Filtering   capacity   Restricted   permeability	  1.00    1.00	capacity	  1.00    0.96	capacity	  1.00    0.96
136:	İ	İ	İ	İ	İ	İ	İ
Haxtun, dry	85       	Very limited:   Filtering   capacity   Restricted   permeability	  1.00    1.00	capacity	  1.00    0.96	Very limited:   Filtering   capacity   Restricted   permeability	  1.00    0.96
	i		i		İ	permeability	i
137: Haxtun, dry	   55       	  Very limited:   Filtering   capacity   Restricted   permeability	  1.00    1.00	capacity	    1.00    0.96	capacity	  1.00    0.96
Olney	   30     	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    1.00	capacity	    1.00    0.96	capacity	  1.00    0.96
138:	 	l I		l I		 	l I
	   55         	Very limited:   Filtering   capacity   Restricted   permeability	  1.00    1.00 	capacity	  1.00    0.96	capacity	  1.00    0.96
Olnest	30     	Very limited:   Filtering   capacity	  1.00 	Very limited:   Filtering   capacity	  1.00 	Very limited:   Filtering   capacity	  1.00 
139:	i	 	i	 	<u> </u>		i
Keith	85     	Very limited:   Restricted   permeability 	  1.00   	Somewhat limited:   Restricted   permeability	  0.96   	Somewhat limited:   Restricted   permeability	  0.96   
140: Keith	   85       	  Very limited:   Restricted   permeability   	    1.00     	  Somewhat limited:   Restricted   permeability   	    0.96     		  0.96    0.91 
	     	    - 		    - 	     	Too steep for sprinkler application	0.02     

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food processing was	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	
	   		:	Rating class and   limiting features		Rating class and	Value
141: Kim	     90   	    Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Restricted   permeability	      0.96	  Somewhat limited:   Restricted   permeability	      0.96
142: Kim	   90           	  Very limited:   Restricted   permeability   	    1.00           	  Somewhat limited:   Restricted   permeability   	    0.96         	  Very limited:   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler	    1.00      0.96    0.10
143: Kimst	       90   	    Very limited:   Restricted   permeability	        1.00	      Somewhat limited:   Restricted   permeability	        0.96	application         Somewhat limited:   Restricted   permeability	        0.96
144: Kimst	   90             	  Very limited:   Restricted   permeability     	      1.00           	  Somewhat limited:   Restricted   permeability   	    0.96           	  Very limited:   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler   application	    1.00      0.96    0.10
145: Las Animas, occasionally flooded	       85         	Depth to saturated zone Runoff	        1.00  1.00    0.40  0.01  0.01	Depth to   saturated zone   Filtering   capacity	          1.00      0.01	•	        1.00    0.60  0.01
146: Limon, rarely flooded	     85         	Restricted permeability Flooding Sodium content	      1.00    0.40  0.08  0.01	permeability Flooding Salinity	      1.00    0.40  0.13  0.08	permeability Salinity Sodium content	      1.00    0.13  0.08
147: Limon, moist, rarely flooded		Restricted permeability Flooding	    1.00    0.40  0.08  0.01	permeability Flooding Salinity	    1.00    0.40  0.13  0.08	permeability Salinity Sodium content	    1.00    0.13  0.08

Table 14a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map	manure and food	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	L
	unit   		Value	   Rating class and   limiting features	Value	Rating class and limiting features	Value
148: Manzanola	     85   	    Very limited:   Restricted   permeability	      1.00	    Very limited:   Restricted   permeability	      1.00	    Very limited:   Restricted   permeability	      1.00
149:		 		 		 	
Manzanst, rarely flooded	   90     	  Very limited:   Restricted   permeability   Flooding	    1.00    0.40	  Very limited:   Restricted   permeability   Flooding	    1.00    0.40	  Very limited:   Restricted   permeability   Sodium content	    1.00    0.18
		Sodium content	0.18	Sodium content	0.18	 	
150: Manzanst	   85       	  Very limited:   Restricted   permeability   Sodium content	    1.00    0.18	  Very limited:   Restricted   permeability   Sodium content	    1.00    0.18	  Very limited:   Restricted   permeability   Sodium content	    1.00    0.18
151: Midway	85   85     	  Very limited:   Restricted   permeability   Droughty   Depth to bedrock   Sodium content   Runoff	  1.00    1.00  1.00  0.50  0.40	  Very limited:   Droughty   Restricted   permeability   Depth to bedrock   Sodium content	1.00  1.00 	  Very limited:   Droughty   Restricted   permeability   Depth to bedrock   Sodium content	  1.00  1.00    1.00  0.50
152:		 		 		 	
Midway, moist	   85           	  Very limited:   Restricted   permeability   Droughty   Depth to bedrock   Sodium content   Runoff	  1.00    1.00  1.00  0.50  0.40	! -	  1.00  1.00    1.00  0.50	  Very limited:   Droughty   Restricted   permeability   Depth to bedrock   Sodium content	  1.00  1.00    1.00  0.50
153:	į		į		į		į
Midway	55             	Very limited:   Restricted   permeability   Droughty   Depth to bedrock   Sodium content   Runoff	  1.00    1.00  1.00  0.50  0.40		1.00  1.00 	Very limited:   Droughty     Restricted     permeability     Depth to bedrock     Too steep for     surface     application     Sodium content	  1.00  1.00    1.00  1.00   
Razor	   30     	   Very limited:   Restricted   permeability   Depth to bedrock	:		1.00    0.42	   Very limited:   Restricted   permeability   Too steep for	  1.00    1.00
	         	Droughty   Slope   Sodium content   	0.32  0.16  0.08   	Slope	0.32  0.16  0.08   	•	  0.42  0.39 
	İ	İ	İ	İ	İ	Droughty	0.32

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct.   of  map  unit	manure and food processing was	-	Application of sewage sludg	Disposal of wastewater by irrigation	ı	
	   		Value	Rating class and   limiting features		Rating class and limiting features	Value
154: Midway, moist	     55		      1.00	    Very limited:   Droughty	      1.00	    Very limited:   Droughty	      1.00
	     	Depth to bedrock	  1.00  1.00  0.50	Depth to bedrock	1.00    1.00  0.50	permeability Depth to bedrock	1.00    1.00  1.00
	     	Runoff     	0.40     	Slope     	0.16     	surface application Sodium content	    0.50
Razor, moist	30     	Restricted permeability Depth to bedrock	1.00    0.42	permeability Depth to bedrock	1.00    0.42	permeability Too steep for	  1.00    1.00
	           	Slope	0.32  0.16  0.08     	Slope	0.32  0.16  0.08   	application	  0.42  0.39      0.32
155: Midway	   55           	permeability Droughty Depth to bedrock Slope	   1.00   1.00   1.00   1.00   0.50	Restricted   permeability   Depth to bedrock	1.00  1.00 	Too steep for	  1.00  1.00    1.00  1.00   
Rock outcrop	         30	        Not rated	;       	        Not rated	       	sprinkler application	
156:	 	] 	 	] 	 	] 	
Midway, moist	55           	Restricted permeability Droughty Depth to bedrock Slope	1.00    1.00	Depth to bedrock	1.00  1.00 	permeability Depth to bedrock Too steep for	  1.00  1.00    1.00  1.00
	       	 	       	 	       	application Too steep for sprinkler application	  1.00   
Rock outcrop, moist-	30 30	  Not rated   		  Not rated   	     	  Not rated   	   
Nunn	85         	:	    1.00   	  Somewhat limited:   Restricted   permeability   	    0.96   	  Somewhat limited:   Restricted   permeability   Too steep for   surface	  0.96    0.08

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food processing was	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	ı
	   		Value	Rating class and   limiting features	Value	Rating class and limiting features	Value
158: Nunn	     55   	    Very limited:   Restricted   permeability	      1.00	    Somewhat limited:   Restricted   permeability	      0.96	    Somewhat limited:   Restricted   permeability	      0.96
Sampson, rarely flooded	     30       	  Very limited:   Restricted   permeability   Flooding	      1.00    0.40	  Somewhat limited:   Restricted   permeability   Flooding	    0.96    0.40	  Somewhat limited:   Restricted   permeability   	    0.96   
159: Nunn, dry	   50     	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Restricted   permeability	    0.96 	  Somewhat limited:   Restricted   permeability	    0.96 
Sampson, dry, rarely flooded		  Very limited:   Restricted   permeability   Flooding	    1.00    0.40	  Somewhat limited:   Restricted   permeability   Flooding	    0.96    0.40	  Somewhat limited:   Restricted   permeability	    0.96   
160: Olnest	   85     	  Very limited:   Filtering   capacity	      1.00 	  Very limited:   Filtering   capacity	      1.00 	    Very limited:   Filtering   capacity 	    1.00 
161: Olnest	   85     	  Somewhat limited:   Filtering   capacity 	    0.01 	  Somewhat limited:   Filtering   capacity 	    0.01 	  Somewhat limited:   Filtering   capacity	    0.01 
162: Olnest	   85         	  Somewhat limited:   Filtering   capacity   	    0.01       	  Somewhat limited:   Filtering   capacity   	    0.01       	  Somewhat limited:   Too steep for   surface   application   Filtering   capacity	  0.08      0.01
163: Olnest	   90             	  Somewhat limited:   Slope   Filtering   capacity 	  0.04  0.01     	  Somewhat limited:   Slope   Filtering   capacity 	  0.04  0.01     	-	  1.00    0.22    0.01
164: Olney	   85         	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    1.00	  Very limited:   Filtering   capacity   Restricted   permeability	      1.00    0.96	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.96

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food processing was	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	ı
	 		Value	   Rating class and   limiting features	Value	   Rating class and   limiting features	Value
165: Olney	   85       	  Very limited:   Filtering   capacity   Restricted   permeability	      1.00    1.00	  Very limited:   Filtering   capacity   Restricted   permeability	      1.00    0.96	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.96
166: Olney	     85	    Very limited:	:	    Very limited:	:	    Very limited:	
	         	Filtering   capacity   Restricted   permeability 	1.00    1.00     	Filtering   capacity   Restricted   permeability 	1.00    0.96     	Filtering   capacity   Restricted   permeability   Too steep for   surface   application	1.00    0.96    0.08
167: Olney	   90       	  Very limited:   Filtering   capacity   Restricted   permeability	      1.00    1.00	  Very limited:   Filtering   capacity   Restricted   permeability	      1.00    0.96	  Very limited:   Filtering   capacity   Too steep for   surface	    1.00    1.00
	         	Slope         	0.04           	Slope         	0.04           	application Restricted permeability Too steep for sprinkler application	  0.96    0.22   
168: Olney	   55       	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    1.00	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.96	  Very limited:   Filtering   capacity   Too steep for   surface	  1.00    1.00
	         		         		       	application Restricted permeability Too steep for sprinkler application	  0.96    0.10 
Midway	   30             	Restricted permeability Droughty Depth to bedrock Sodium content	1.00    1.00		1.00  1.00 	Restricted permeability Depth to bedrock	  1.00  1.00    1.00  1.00     
169: Otero	     85 	      Somewhat limited:   Filtering   capacity	        0.01	      Somewhat limited:   Filtering   capacity	        0.01	Sodium content 	        0.01

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	ı
	   		Value	Rating class and limiting features		Rating class and limiting features	Value
170: Oterodry	     85     	    Somewhat limited:   Filtering   capacity 	      0.01 	    Somewhat limited:   Filtering   capacity 	      0.01 	    Somewhat limited:   Filtering   capacity 	      0.01 
171: Oterodry	   85     	  Somewhat limited:   Filtering   capacity	    0.01   	  Somewhat limited:   Filtering   capacity 	    0.01   	  Somewhat limited:   Too steep for   surface   application   Too steep for	    0.91      0.02
	       	       	       	       	       	sprinkler   application   Filtering   capacity	
172: Platner	     85   	    Very limited:   Restricted   permeability	      1.00 	    Somewhat limited:   Restricted   permeability 	      0.96 	    Somewhat limited:   Restricted   permeability 	      0.96 
173: Platner	   50 	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Restricted   permeability	    0.96	  Somewhat limited:   Restricted   permeability	    0.96
Ascalon	   35   	  Somewhat limited:   Filtering   capacity	    0.01 	  Somewhat limited:   Filtering   capacity	    0.01 	  Somewhat limited:   Filtering   capacity	    0.01
174: Pleasant, rarely ponded	     90       	Very limited: Restricted permeability Depth to saturated zone Runoff	      1.00    1.00    0.40	 	      1.00    1.00	 	      1.00    1.00
175: Rago, rarely flooded	   90     	  Very limited:   Restricted   permeability   Flooding	    1.00    0.40	permeability	    1.00    0.40	  Very limited:   Restricted   permeability	    1.00 
176: Rago, dry, rarely Flooded	       90     	    Very limited:   Restricted   permeability   Flooding	        1.00    0.40	permeability	        1.00    0.40	  -  Very limited:   Restricted   permeability  -	        1.00   
177: Razor	   85           		1.00    1.00  0.43	permeability Sodium content Droughty Depth to bedrock	1.00    1.00  0.43	permeability Sodium content Droughty	  1.00    1.00  0.43  0.42

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct.   Application of   of   manure and food   map   processing was		-			Disposal of wastewater by irrigation	
	unit	-		 		2, 11119401011	
		Rating class and limiting features	Value 	Rating class and limiting features	Value 	Rating class and limiting features	Value
150							
178:   Razor, moist  	85	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Restricted   permeability	    1.00
			1.00  0.43  0.42	Sodium content   Droughty   Depth to bedrock	1.00  0.43  0.42	Sodium content   Droughty   Depth to bedrock	1.00  0.43  0.42
		Salinity	0.06	İ	į	į	į
   179:		 	l I	 	l I	 	 
Sampson, rarely   flooded	90	  Very limited:   Restricted	      1.00	  Somewhat limited:   Restricted	      0.96	  Somewhat limited:   Restricted	0.96
		permeability Flooding	0.40	permeability Flooding	0.40	permeability	
į			į		į	į	į
180: Sampson, dry, rarely  flooded	90	    Very limited:	   	    Somewhat limited:	:	    Somewhat limited:	   
		Restricted permeability Flooding	1.00    0.40	Restricted   permeability   Flooding	0.96    0.40	Restricted   permeability 	0.96   
 181:		 	 	 	 	 	
	90	  Very limited:   Restricted	1.00	Somewhat limited:   Restricted	    0.96	Somewhat limited:   Restricted	0.96
		permeability   Filtering   capacity	  0.01 	permeability   Filtering   capacity	  0.01 	permeability   Filtering   capacity	0.01
182:		 		 		 	
Satanta, dry	90	  Very limited:   Restricted   permeability	1.00	Somewhat limited:   Restricted   permeability	  0.96	Somewhat limited:   Restricted   permeability	0.96
		Filtering   capacity	0.01	Filtering   capacity	0.01	Filtering   capacity	0.01
183:     Seldom, rarely		 	   	   	   	   	   
flooded	85	Very limited:   Depth to   saturated zone	  1.00	Very limited:   Depth to   saturated zone	  1.00	Very limited:   Depth to   saturated zone	  1.00
		Restricted	1.00	Restricted	0.96	Restricted	0.96
		permeability Flooding	  0.40	permeability Flooding	  0.40	permeability Filtering	0.01
		Runoff Filtering capacity	0.40  0.01 	Filtering   capacity 	0.01     	•	       
184:     Shingle	55			    Very limited:		    Very limited:	 
		Depth to bedrock Droughty	1.00  1.00	Depth to bedrock Droughty	1.00  1.00		1.00
			1.00		0.96		0.96
		permeability Runoff	  0.40 	permeability	   	permeability Too steep for surface	0.31

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food processing was	-	Application   of sewage sludg   	re	Disposal of wastewater by irrigation	ı
	   		Value	Rating class and   limiting features	Value	Rating class and limiting features	Value
184: Midway	     30	    Very limited:	   	    Very limited:	   	    Very limited:	   
•	 	Restricted permeability Droughty	1.00    1.00	Droughty   Restricted	1.00	Droughty Restricted permeability	1.00
	       	Depth to bedrock   Sodium content   Runoff		Depth to bedrock   Sodium content 	1.00  0.50 	Depth to bedrock   Sodium content   Too steep for   surface   application	1.00  0.50  0.31
185:	   	   	   	   	   	application   	   
Shingle, moist	55             	Very limited:    Depth to bedrock     Droughty     Restricted     permeability     Runoff	•	Very limited:   Depth to bedrock   Droughty   Restricted   permeability 		Very limited:    Depth to bedrock     Droughty     Restricted     permeability     Too steep for     surface     application	  1.00  1.00  0.96    0.31
Midway, moist	30               	Very limited:    Restricted   permeability     Droughty     Depth to bedrock     Sodium content     Runoff	1.00    1.00	Very limited:   Droughty   Restricted   permeability   Depth to bedrock   Sodium content 	1.00  1.00 	Very limited:   Droughty   Restricted   permeability   Depth to bedrock   Sodium content   Too steep for   surface   application	  1.00  1.00    1.00  0.50  0.31 
186: Sundance	   85 	Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	1.00	  Very limited:   Filtering   capacity	    1.00
	   	Restricted   permeability 	1.00   	Restricted   permeability	0.96   	Restricted   permeability	0.96   
187: Table Mountain, rarely flooded	       85	    Somewhat limited:   Flooding	      0.40	    Somewhat limited:   Flooding		    Not limited	     
188: Travessilla	   60           	  Very limited:   Droughty   Depth to bedrock   Slope   Runoff   Filtering   capacity	1.00	Depth to bedrock   Slope   Filtering	1.00	Depth to bedrock Too steep for	    1.00  1.00  1.00     
Rock outcrop	           25	 	           	  -  -  -  Not rated	 	sprinkler application Filtering capacity Not rated	    0.01     

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct.	manure and food	-	Application of sewage sludg	e	Disposal of wastewater	
	map  unit		te	 		by irrigation	1
	   		Value	Rating class and   limiting features		Rating class and limiting features	Value
100							
189: Truckton	   85 	  Very limited:   Filtering	1   1.00	  Very limited:   Filtering	1   1.00	  Very limited:   Filtering	1   1.00
	 	capacity Droughty	0.42	capacity Droughty	0.42	capacity   Droughty	0.42
100							
190: Truckton	   85   	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00
	     	Droughty   	  0.42   	Droughty   	  0.42   	Too steep for surface application	0.91
	     	 	     	 	     	Droughty   Too steep for   sprinkler   application	0.42
191:	i	! 		! 		! 	i
Truckton, dry	85	Very limited:   Filtering   capacity	1.00	Very limited:   Filtering   capacity	1.00	Very limited:   Filtering   capacity	1.00
		Droughty	0.42	Droughty	0.42	Droughty	0.42
192:	 	 	 	 	 	 	
Truckton, dry	85 	Filtering	1.00	Very limited:   Filtering	1.00	Very limited:   Filtering	1.00
	     	capacity   Droughty   	  0.42   	capacity   Droughty   	  0.42   	capacity   Too steep for   surface   application	  0.91   
	     	 	 	 	 	Droughty Too steep for sprinkler application	0.42  0.02 
193:	 	 	 	 	 	 	
Valent	85	Very limited:   Filtering	1.00	Very limited:   Filtering	1.00	Very limited:   Filtering	1.00
	   	capacity   Droughty   Slope	  0.65  0.63	capacity   Droughty   Slope	  0.65  0.63	capacity   Too steep for   surface	  1.00 
	     	Leaching     	0.45     	     	     	application Too steep for sprinkler application	  0.77   
	į Į	  -	į	  -	į	Droughty	0.65
194: Valent	     55 	    Very limited:   Filtering	      1.00	    Very limited:   Filtering	      1.00	    Very limited:   Filtering	      1.00
	   	capacity Droughty Leaching	  0.65  0.45	capacity Droughty	  0.65	capacity Too steep for surface	0.91
						application	
	   	 	   	 	   	Droughty   Too steep for   sprinkler   application	0.65  0.02 

Table 14a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	manure and food	-	Application of sewage sludg	е	Disposal of wastewater by irrigation	ı
	 			Rating class and limiting features		Rating class and limiting features	Value
		l		l		l	
194:		  Trans. limited.		 		 	
Bijou	30 	Very limited:   Filtering	1.00	Very limited:   Filtering	1.00	Very limited:   Filtering	1
	i	capacity		capacity		capacity	1
	i	Droughty	0.03		0.03	Too steep for	0.91
			1		1	surface	1
		<u> </u>	!	<u> </u>	!	application	!
			!		!	Droughty	0.03
		 	1	 		Too steep for sprinkler	0.02
		 	1	I 	i	application	1
	i	! 	i	! 	i		i
195:	i	İ	i	İ	i	İ	i
Valent	60	Very limited:	1	Very limited:	1	Very limited:	1
		Filtering	1.00	· -	1.00		1.00
		capacity		capacity		capacity	
		Slope Droughty	0.96		0.96  0.65	Too steep for surface	1.00
		Leaching	0.45	!	10.05	application	1
	i			i I	i	Too steep for	0.97
	i	İ	i	İ	i	sprinkler	i
					1	application	1
	!		!		!	Droughty	0.65
Vene		  Trans. limited.		 		  Trans. limited.	
Vona	30 	Very limited:   Filtering	1.00	Very limited:   Filtering	1.00	Very limited:   Filtering	1
	i	capacity	1	capacity	1	capacity	1
	i	Slope	0.04	Slope	0.04	Too steep for	1.00
	ĺ	ĺ	Ī	ĺ	İ	surface	Ī
		[	1		1	application	1
	!		!		ļ	Too steep for	0.22
		 	1	 		sprinkler	1
	 	 	1	 	1	application 	1
196:	i	! 	i	<u> </u> 	i	! 	i
Valent	55	Very limited:	i	Very limited:	i	Very limited:	i
		Filtering	1.00	Filtering	1.00	Filtering	1.00
	!	capacity		capacity		capacity	
		Slope	0.96	:	0.96	Too steep for	1.00
	 	Droughty Leaching	0.65	!	0.65 	surface application	1
	i		1	! [	i	Too steep for	0.97
	i	İ	i	j	i	sprinkler	i
			1		1	application	1
	!	<u> </u>	!	<u> </u>	ļ	Droughty	0.65
**							
Vonid	35 	Very limited:   Filtering	1.00	Very limited:   Filtering	1.00	Very limited:   Filtering	1
		capacity	1	capacity	1	capacity	1
	i	Slope	0.04		0.04		1.00
		I		I		surface	
		]	[	!		application	1
	!		!		ļ	Too steep for	0.22
		  -	1	 	1	sprinkler application	1

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	manure and food processing was	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	1
	 	Rating class and limiting features	Value	Rating class and limiting features	•	Rating class and limiting features	Value
197: Vona	   85         	    Very limited:   Filtering   capacity   	      1.00     	    Very limited:   Filtering   capacity   	    1.00     	  Very limited:   Filtering   capacity   Too steep for   surface   application	    1.00    0.31 
198:	 	 	 	 	 	 	
Vona	85     	Somewhat limited:   Filtering   capacity 	  0.01   	Somewhat limited:   Filtering   capacity 	  0.01   	Somewhat limited:   Filtering   capacity 	  0.01   
199: Vona	   85             	  Somewhat limited:   Slope   Filtering   capacity 	   0.04   0.01         	  Somewhat limited:   Slope   Filtering   capacity   	  0.04  0.01     	<u>-</u>	  1.00      0.22      0.01
200: Vona	   35             	  Somewhat limited:   Filtering   capacity   	       0.01             	  Somewhat limited:   Filtering   capacity   	    0.01           	  Very limited:   Too steep for   surface   application   Too steep for   sprinkler   application   Filtering   capacity	   1.00       0.10       0.01
Karval	   30               	capacity Droughty	  1.00  1.00  1.00  0.45  0.11 	capacity Droughty	  1.00  1.00  1.00  0.42   	capacity Too steep for	  1.00    1.00    1.00  1.00    0.42
Midway, moist	   20                 	Restricted permeability Droughty Depth to bedrock	1.00    1.00	Depth to bedrock	1.00  1.00 	Restricted permeability Too steep for surface	  1.00  1.00    1.00      1.00  1.00

Table 14a.--Agricultural Waste Management--Continued

		I		1			
	  Pct.   of	!		   Application   of sewage sludg	e	   Disposal of   wastewater	
	map  unit		te	 		by irrigation	ı
	 	Rating class and limiting features	Value 	Rating class and limiting features	Value 	Rating class and limiting features	Value
201: Vona	     55	    Somewhat limited:   Filtering	      0.01	    Somewhat limited:   Filtering	      0.01	    Very limited:   Too steep for	      1.00
	         	capacity		capacity	         	surface application Too steep for sprinkler application	    0.10 
	   	   	   	   	   	Filtering   capacity 	0.01   
Midway, moist	30             	Very limited:   Restricted   permeability   Droughty   Depth to bedrock   Sodium content   Runoff	1.00    1.00	Restricted   permeability   Depth to bedrock	1.00  1.00 	Restricted permeability	  1.00  1.00    1.00  1.00      0.50
202: Vona	     60   	  Somewhat limited:   Slope   Filtering	      0.96  0.01	!	      0.96  0.01	  Very limited:   Too steep for   surface	1   1.00
	         	capacity       	         	capacity       	         	application Too steep for sprinkler application Filtering capacity	  0.97      0.01
Seldom	   20   	  Very limited:   Depth to   saturated zone	    1.00	  Very limited:   Depth to   saturated zone	1   1.00	  Very limited:   Depth to   saturated zone	    1.00
	   	Restricted   permeability   Slope	1.00      0.96	Restricted   permeability   Slope	0.96    0.96	Too steep for surface application	1.00
	     	Runoff   Filtering   capacity	0.40  0.01	Filtering	0.96	Too steep for sprinkler application	  0.97   
	       	 	 	 	 	Restricted permeability Filtering capacity	0.96    0.01 
203: Vonid	   85       	  Very limited:   Filtering   capacity 	    1.00   	  Very limited:   Filtering   capacity 	    1.00   	   Very limited:   Filtering   capacity   Too steep for   surface	    1.00    0.31
204: Vonid	       85   	      Somewhat limited:   Filtering   capacity 	        0.01	      Somewhat limited:   Filtering   capacity 	        0.01	application         Somewhat limited:   Filtering   capacity	        0.01

Table 14a.--Agricultural Waste Management--Continued

and soil name	Pct.   Application of of   manure and food-map   processing waste unit		-	Application   of sewage sludg   	Disposal of wastewater by irrigation		
	   			Rating class and   limiting features	•	Rating class and limiting features	Value
205: Vonid	     85   	    Somewhat limited:   Slope   Filtering	      0.04  0.01	    Somewhat limited:   Slope   Filtering	      0.04  0.01	    Very limited:   Too steep for   surface	      1.00
	           	capacity	           	capacity       	           	application Too steep for sprinkler application Filtering capacity	  0.22      0.01
206: Vonid	     35     	  Somewhat limited:   Filtering   capacity	      0.01   	  Somewhat limited:   Filtering   capacity 	    0.01 	  Very limited:   Too steep for   surface   application	    1.00 
	         	 	       	 	       	Too steep for sprinkler application Filtering capacity	0.10      0.01
Karval	   30   	  Very limited:   Filtering   capacity	    1.00 	  Very limited:   Filtering   capacity	    1.00	  Very limited:   Filtering   capacity	    1.00
	             		1.00  1.00  0.45  0.11 	·	1.00  1.00  0.42 	Too steep for surface application Droughty Too steep for sprinkler application Too acid	1.00      1.00  1.00      0.42
Midway	   20   	  Very limited:   Restricted   permeability	    1.00 	  Very limited:   Droughty   Restricted	    1.00  1.00	  Very limited:   Droughty   Restricted	    1.00  1.00
	           	Droughty Depth to bedrock Slope Sodium content	1.00  1.00  1.00  0.50 	Depth to bedrock	  1.00  1.00  0.50     	permeability Too steep for surface application Depth to bedrock Too steep for sprinkler application	  1.00    1.00  1.00
207: Vonid	   55           	Somewhat limited:   Filtering   capacity 	    0.01         	  Somewhat limited:   Filtering   capacity   	    0.01         	  Very limited:   Too steep for   surface   application   Too steep for   sprinkler   application   Filtering   capacity	  1.00      0.10      0.01

Table 14a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map	manure and food	-	Application of sewage sludg	e	Disposal of wastewater by irrigation	ı
	unit   		Value	   Rating class and   limiting features	Value	Rating class and limiting features	Value
		!		!			
207: Midway	   30   	  Very limited:   Restricted   permeability	    1.00	,	    1.00	  Very limited:   Droughty   Restricted	    1.00  1.00
	 	Droughty Depth to bedrock	•	permeability Depth to bedrock	  1.00	permeability Depth to bedrock	11.00
	   	Sodium content   Runoff 	0.50  0.40 	Sodium content   	0.50   	Too steep for surface application Sodium content	1.00
208:	   	   	   	   	   	Sodium content	0.50   
Vonid	   65     	Somewhat limited:   Slope   Filtering   capacity	  0.96  0.01	Somewhat limited:   Slope   Filtering   capacity	  0.96  0.01	  Very limited:   Too steep for   surface   application	1.00
	     		   		     	Too steep for sprinkler application	0.97
	   	   	   	   	   	Filtering   capacity 	0.01
Seldom	20   	  Very limited:   Depth to   saturated zone	1.00	  Very limited:   Depth to   saturated zone	1.00	  Very limited:   Depth to   saturated zone	1.00
	     	Restricted   permeability   Slope	  1.00    0.96	Restricted permeability	  0.96    0.96	Too steep for surface application	1.00
	     	Runoff   Filtering   capacity	0.40  0.01	Filtering   capacity 	0.01   	Too steep for sprinkler application	0.97
	   	 	     	 	   	Restricted permeability Filtering	0.96
209:	i I	 	 	 	 	capacity	į Į
Wages	   85 	Very limited:   Restricted	1   1.00	Somewhat limited:   Restricted	    0.96	Somewhat limited:   Restricted	0.96
	     	permeability     	     	permeability     	     	permeability Too steep for surface application	  0.08   
210: Wages	     85	    Very limited:	   	    Somewhat limited:	   	    Very limited:	   
	 	Restricted permeability Slope	1.00    0.04	Restricted permeability Slope	0.96    0.04	Too steep for surface application	1.00
	   	510pe    -		510pe    -		Restricted permeability	0.96
	     	 	     	 	     	Too steep for   sprinkler   application	0.22     
211: Wages, dry	   85	    Very limited:   Restricted	    1.00	    Somewhat limited:   Restricted	      0.96	  Somewhat limited:   Restricted	      0.96
	1	Vebri Toren	1 00	Vebriicien	10.30	"EBCT TOTER	10.30

Table 14a.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map	manure and food	-	Application   of sewage sludg 	e	Disposal of wastewater by irrigation	1
	unit   		Value	   Rating class and   limiting features	Value	   Rating class and   limiting features	Value
					!		
212: Wages	   60	  Very limited:	l I	Somewhat limited:		  Very limited:	
nages	00     	Restricted permeability	1.00    0.37	Restricted   permeability   Slope	0.96    0.37	Too steep for surface application	  1.00   
	   	 	   	 	   	Restricted   permeability   Too steep for	0.96    0.59
	   	 	   	 	   	sprinkler   application 	   
Karval	25	Very limited:	İ	Very limited:	İ	Very limited:	İ
	   	capacity	1.00    1.00	Filtering   capacity   Droughty	1.00    1.00	Filtering   capacity   Droughty	1.00    1.00
	i		0.45	Too acid	0.42	Too steep for	1.00
		Slope   Too acid	0.37	Slope	0.37	surface application	
	   	 	   	   	   	Too steep for sprinkler application	0.59   
	 	[ [	 	[ 	 	Too acid 	0.42
213: Weld	     85 	    Very limited:   Restricted	      1.00	    Somewhat limited:   Restricted	      0.96	    Somewhat limited:   Restricted	      0.96
	 	permeability	i I	permeability 	İ İ	permeability 	i I
214: Weld, dry		  Very limited:		Somewhat limited:		Somewhat limited:	
werd, dry	03	Restricted permeability	1.00	Restricted   permeability	  0.96 	Restricted   permeability	0.96
215:	İ		İ	! 	i	! 	i
Wiley	85   	Very limited:   Restricted   permeability	  1.00 	Somewhat limited:   Restricted   permeability	  0.96 	Somewhat limited:   Restricted   permeability	  0.96 
216: Wiley	     85	    Very limited:	:	    Somewhat limited:		    Very limited:	 
	   	Restricted permeability	1.00   	Restricted   permeability 	0.96   	Too steep for surface application	1.00   
	 		i I	   	i I	Restricted permeability	0.96 
	   	 	   	 	   	Too steep for   sprinkler   application	0.10   
217: Wilid	     85 	    Not limited 	     	    Not limited 	     	    Not limited 	 
218: Water	   90	  Not rated 	   	    Not rated 	     	    Not rated 	 
219: Gravel pits	    100	    Not rated	     	    Not rated 		    Not rated 	 
220: Access denied	    100	    Not rated	   	    Not rated		    Not rated	 

Table 14b.--Agricultural Waste Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	of wastewater		   Rapid infiltrati   of wastewater   		   Slow rate treatm   of wastewatem 	
			:	Rating class and limiting features		Rating class and limiting features	Value
101: Apishapa, rarely ponded	       90     	    Very limited:   Depth to   saturated zone	   	    Very limited:   Restricted   permeability	   	      Very limited:	      1.00    1.00
102: Arvada	     85     	Sodium content	      1.00  1.00	  Very limited:   Restricted   permeability	      1.00 	  Very limited:   Sodium content   Restricted   permeability	    1.00  1.00
103: Ascalon	     85     		      1.00 	  Very limited:   Restricted   permeability	      1.00 	  Somewhat limited:   Filtering   capacity	      0.01 
104: Ascalon	   85         		    1.00         	  Very limited:   Restricted   permeability   	    1.00         	  Somewhat limited:   Too steep for   surface   application   Filtering   capacity	  0.08    0.01
105: Ascalon	   85             	Seepage	  1.00  0.05       	  Very limited:   Restricted   permeability   Slope   	    1.00    0.86     	Somewhat limited:   Too steep for   surface   application   Too steep for   sprinkler   application   Filtering   capacity	  0.91    0.05    0.01
106: Ascalon, dry	     85   		      1.00 	  Very limited:   Restricted   permeability 	      1.00 	  Somewhat limited:   Filtering   capacity 	      0.01 
107: Ascalon, dry	   85         	•	    1.00     	  Very limited:   Restricted   permeability   	    1.00     	   Somewhat limited:   Too steep for   surface   application   Filtering   capacity	  0.08      0.01

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map	:		   Rapid infiltrati   of wastewater 		   Slow rate treatm   of wastewater 	
	unit   		Value	Rating class and   limiting features	Value	Rating class and   limiting features	Value
108: Ascalon, dry	   85             	Seepage	    1.00  0.05       	  Very limited:   Restricted   permeability   Slope 	    1.00    0.86     	Somewhat limited:   Too steep for   surface   application   Too steep for   sprinkler   application   Filtering   capacity	    0.91    0.05      0.01
109: Ascalon	   55   	• -	    1.00 	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Filtering   capacity	
Haxtun	30         	  Very limited:   Seepage     	 	  Very limited:   Restricted   permeability   	  1.00       	  Very limited:   Filtering   capacity   Restricted   permeability	  1.00    0.84
110: Ascalon, dry	   55   	• -	    1.00	  Very limited:   Restricted   permeability	    1.00	  Somewhat limited:   Filtering   capacity	    0.01 
Haxtun, dry	   30       		    1.00     	  Very limited:   Restricted   permeability   	    1.00     	  Very limited:   Filtering   capacity   Restricted   permeability	  1.00    0.84
111: Bacid	   85   	  Very limited:   Seepage 	    1.00 	  Very limited:   Restricted   permeability	    1.00 	  Very limited:   Restricted   permeability	    1.00
112: Bankard, occasionally flooded	       55     	Flooding	        1.00  1.00	      Somewhat limited:   Flooding   	          0.60   	    Very limited:   Filtering   capacity   Flooding	        1.00    0.60
Glenberg, occasionally flooded	     30     	,	      1.00  1.00	•	      0.96    0.60	capacity	      1.00    0.60
113: Bijou	   90   		      1.00 	  -  Somewhat limited:   Restricted   permeability	      0.96 	  -  Very limited:   Filtering   capacity 	      1.00
114: Bijou, moist	   90   		    1.00   	  Somewhat limited:   Restricted   permeability 	    0.96 	  Very limited:   Filtering   capacity 	    1.00 

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	   		:	Rating class and limiting features		Rating class and limiting features	Value
115: Bijou, moist	   90             	  Very limited:   Seepage   Too steep for   surface   application 	    1.00  0.21       		    1.00  0.96         	  Very limited:   Filtering   capacity   Too steep for   surface   application   Too steep for   sprinkler   application	    1.00    1.00      0.21
116: Blakeland	   85               	Very limited: Seepage Too steep for surface application	  1.00  0.21         	  Very limited:   Slope             	  1.00               	Very limited:   Filtering   capacity   Too steep for   surface   application   Too steep for   sprinkler   application	  1.00  1.00    1.00     0.21
117: Bresser	   85     	  Very limited:   Seepage   	    1.00   	  Very limited:   Restricted   permeability 	    1.00   	  Very limited:   Filtering   capacity 	    1.00 
118: Campo	   85     	  Very limited:   Seepage   	    1.00 	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Restricted   permeability	    0.84 
119: Canyon	   55                 	Very limited:   Seepage   Depth to bedrock   Too steep for   surface   application	1.00	permeability	1.00 	Too steep for surface	   1.00   1.00       1.00       1.00       0.84     0.01
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	   
120: Colby	   85     		    1.00 	  Very limited:   Restricted   permeability 	    1.00 	  Not limited     	       
121: Colby	   85           	Seepage	  1.00  0.21   		  1.00    1.00   	surface	  1.00      0.21

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
			Value	Rating class and   limiting features		Rating class and   limiting features	Value
122: Colby	     50 	    Very limited:   Seepage 	      1.00	    Very limited:   Restricted   permeability	      1.00	    Not limited   	       
Weld	   40   	  Somewhat limited:   Seepage 	    0.77 	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Restricted   permeability	    0.84 
123: Firstview	   85         	  Very limited:   Seepage   Sodium content   	  1.00  1.00   	  Very limited:   Restricted   permeability   	    1.00     	  Very limited:   Sodium content   Restricted   permeability   Filtering   capacity	  1.00  1.00    0.01
124: Fort Collins	     90   	  Very limited:   Seepage 	      1.00	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Restricted   permeability	      0.84 
125: Fort Collins	   85         	  Very limited:   Seepage     	  1.00     	  Very limited:   Restricted   permeability   	    1.00       		    0.84    0.08
126: Fort Collins	   55           	Very limited: Seepage Too steep for surface application	    1.00  0.21   	  Very limited:   Restricted   permeability   Slope 	    1.00    1.00   	   Very limited:   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler	    1.00      0.84    0.21
Karval	   35               	  Very limited:   Seepage   Too steep for   surface   application   Too acid	   1.00  1.00   1.00       0.42 	  Very limited:   Slope             	    1.00             	application     Very limited:   Filtering   capacity   Too steep for   surface   application   Too steep for   sprinkler   application   Too acid	    1.00    1.00    1.00    1.00
127: Fort Collins	     50 	    Very limited:   Seepage 	      1.00	    Very limited:   Restricted   permeability	      1.00	    Somewhat limited:   Restricted   permeability	      0.84
Platner	   35   	  Somewhat limited:   Seepage 	    0.77 	  Very limited:   Restricted   permeability		  Somewhat limited:   Restricted   permeability	    0.84 

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	unit   		•	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
		Ī		l		l	Ī
128: Fort Collins	   50 	Seepage	1.00	:	    1.00		    1.00
	 	Too steep for surface	0.21	permeability Slope	1.00		
	   	application   	   	   	   	Restricted   permeability   Too steep for	0.84
	     	   	     	   	     	sprinkler   application	
Razor, moist	40 	  Very limited:   Seepage	1.00	  Very limited:   Restricted	1.00	  Very limited:   Restricted	    1.00
		Depth to bedrock	1.00	permeability	1	permeability	1
	!	Too steep for	0.76				:
	   	surface application Sodium content	    0.08	Slope   	1.00	Too steep for surface application	1.00
	   		   	   	   	Too steep for sprinkler	0.76
	İ	ĺ	İ	ĺ	İ	application	į
100		 	 	 		Sodium content	0.08
129: Fort	   85 	  Very limited:   Seepage	    1.00	  Very limited:   Restricted	    1.00	  Somewhat limited:   Restricted	    0.84
	į Į	Sodium content	0.50	permeability	į	permeability Sodium content	0.50
	   	 	   	 	 	Filtering   capacity	0.01
130:		 	 	 	 	 	
Fort	85   	Very limited:   Seepage   Sodium content	  1.00  0.50		  1.00	Somewhat limited:   Restricted   permeability	0.84
	i				i	Sodium content	0.50
	 	 	 	 	 	Too steep for surface	0.08
	   	 	   	 	   	application Filtering capacity	  0.01 
131:			 				
Fort	55	Very limited:   Seepage	1.00	Very limited:   Restricted	1.00	Very limited:   Too steep for	1.00
	ļ	•	0.50	! -	ļ.	surface	
	!	Too steep for	0.21	Slope	1.00		
	 	surface application	 	 	 	Restricted permeability	0.84
	į	İ	İ	İ	İ	Sodium content	0.50
	ļ		ļ		ļ	Too steep for	0.21
	l I	 	 	 	 	sprinkler application	 
	i	İ	i	İ	i	Filtering	0.01
	I	I	I	1	1	capacity	1

Table 14b.--Agricultural Waste Management--Continued

	Pct. of	•		Rapid infiltrati of wastewater		Slow rate treatm	
	map	:					
	unit   		Value	   Rating class and   limiting features	•	   Rating class and   limiting features	
	i	<u>.</u> 	İ	 	i	 	i
131: Karval	   35	  Very limited:	 	  Very limited:	 	  Very limited:	I I
		Seepage	1.00	Slope	1.00	• -	1.00
	   	surface application Too acid	      0.42	 	   	Too steep for surface application	1.00
	     	100 acid   		   	     	Too steep for sprinkler application	11.00
		 		   		Too acid	0.42
132:		 		 		 	
Fort	50		1.00		1.00		1.00
	   	!	0.50  0.21	permeability   Slope 	  1.00	surface application Restricted	    0.84
	į	application	   	   	   	permeability Sodium content	0.50
	i i	   	;   	   	   	Too steep for sprinkler	0.21
	   	 	;   	 	     	application Filtering capacity	  0.01 
Razor	40	  Very limited:	:	  Very limited:	:	  Very limited:	
	 	Depth to bedrock	1.00  1.00  0.76	permeability	1.00	permeability	1.00
	   	surface application		Slope	1.00		11.00
	   	!	0.08	   	   	application Too steep for	0.76
	 	 	 	 	 	sprinkler application	
	 	 	 	 	 	Sodium content	0.08 
133: Haversid, rarely	 	 	 	 	 	 	
flooded	85 	Somewhat limited:   Seepage	  0.77	Very limited:   Restricted	  1.00	Somewhat limited:   Restricted	  0.84
	 	Flooding   Sodium content	0.40	permeability	 	permeability Sodium content	0.08
134:	 	 	 	 	 	 	
Haverson, rarely flooded	   85	  Very limited:	 	  Very limited:	 	  Somewhat limited:	
	   	Seepage   Flooding	1.00	Restricted permeability	1.00	Restricted permeability	0.84
135: Haxtun	     85	    Very limited:	   	    Very limited:		    Very limited:	
		Seepage 	1.00	:	1.00	:	1.00
	 	 	 	 	 	Restricted permeability	0.84

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map	of wastewater				Slow rate treatm	
	unit   		Value	Rating class and   limiting features	•	Rating class and   limiting features	Value
136: Haxtun, dry	   85     	  Very limited:   Seepage     	      1.00   	  Very limited:   Restricted   permeability 	      1.00   	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.84
137: Haxtun, dry	     55     	  Very limited:   Seepage     	      1.00   	  Very limited:   Restricted   permeability   	      1.00   	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.84
Olney	30	  Very limited:   Seepage     	    1.00     	  Very limited:   Restricted   permeability 	    1.00     	  Very limited:   Filtering   capacity   Restricted   permeability	  1.00    0.84
138: Haxtun	   55     	  Very limited:   Seepage     	      1.00   	  Very limited:   Restricted   permeability 	      1.00   	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.84
Olnest	30	  Very limited:   Seepage 	    1.00	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Filtering   capacity	    1.00
139: Keith	     85   	  Very limited:   Seepage	      1.00	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Restricted   permeability	      0.84
140: Keith	   85             	  Very limited:   Seepage   Too steep for   surface   application 	    1.00  0.05       	:	    1.00    0.86     	surface	    0.91    0.84    0.05
141: Kim	   90   	  Very limited:   Seepage 	    1.00 	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Restricted   permeability	    0.84 
142: Kim	   90           	  Very limited:   Seepage   Too steep for   surface   application	  1.00  0.21     	•	    1.00    1.00     	Very limited:   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler   application	  1.00    0.84    0.21

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	unit   		Value	   Rating class and   limiting features	Value	   Rating class and   limiting features	Value
143: Kimst	     90   	    Very limited:   Seepage 	      1.00	    Very limited:   Restricted   permeability	      1.00	    Somewhat limited:   Restricted   permeability	      0.84 
144: Kimst	   90             	  Very limited:   Seepage   Too steep for   surface   application 	   1.00  0.21     	  Very limited:   Restricted   permeability   Slope   	    1.00    1.00     	Very limited:   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler   application	   1.00   1.00   0.84   0.21
145: Las Animas, occasionally flooded	       85       	Very limited:	        1.00  1.00  1.00	:	        1.00    0.96	Very limited: Depth to saturated zone Flooding Filtering capacity	        1.00    0.60  0.01
146: Limon, rarely flooded	     85       	      Somewhat limited:   Flooding   Sodium content   	      0.40  0.08 	    Very limited:   Restricted   permeability 	      1.00     	    Very limited:   Restricted   permeability   Salinity   Sodium content	      1.00    0.13  0.08
147: Limon, moist, rarely flooded		    Somewhat limited:   Flooding   Sodium content   	      0.40  0.08   	    Very limited:   Restricted   permeability   	      1.00     	    Very limited:   Restricted   permeability   Salinity   Sodium content	      1.00    0.13  0.08
148: Manzanola	   85   	  Somewhat limited:   Seepage 	    0.77	  Very limited:   Restricted   permeability	    1.00	  Very limited:   Restricted   permeability	    1.00
149: Manzanst, rarely flooded	     90     	  -  Very limited:   Seepage   Flooding   Sodium content 	      1.00  0.40  0.18	!	        1.00   	  -  Very limited:   Restricted   permeability   Sodium content	      1.00    0.18
150: Manzanst	   85       	  Very limited:   Seepage   Sodium content 	    1.00  0.18 	  Very limited:   Restricted   permeability 	    1.00   	  Very limited:   Restricted   permeability   Sodium content	  1.00    0.18

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	unit		•	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
			<del>                                     </del>				i
151:					I		
Midway	85	Very limited:	•	Very limited:	•	Very limited:	
	ļ	Depth to bedrock		:	1.00		:
		Sodium content	0.50			Restricted	1.00
	l I	 	 	Depth to bedrock	11.00	permeability Sodium content	10.50
	İ	! [	i	! [	i		
152:	i	İ	i	İ	i	İ	i
Midway, moist	85	Very limited:	İ	Very limited:	İ	Very limited:	į
		Depth to bedrock	1.00	Restricted	1.00	Depth to bedrock	1.00
		Sodium content	0.50	! -	1	Restricted	1.00
	ļ		!	Depth to bedrock	1.00	permeability	
			!		!	Sodium content	0.50
153:	l I	l I	!	l I	!	l I	1
Midway	l 55	  Very limited:	i	  Very limited:	i	  Very limited:	i
		Depth to bedrock	•		1.00		1.00
	i	Too steep for	0.76	•	i	Too steep for	1.00
	İ	surface	İ	Depth to bedrock	1.00	surface	į
		application		Slope	1.00	application	
		Sodium content	0.50			Restricted	1.00
		  -	!	<u> </u>	!	permeability	!
	ļ		!		ļ	Too steep for	0.76
			!		!	sprinkler	!
	l I	l I	!	l I	!	application Sodium content	10.50
	l I	 	i	! [	i	Bodium Concent	1
Razor	30	  Very limited:	i	  Very limited:	i	  Very limited:	i
	ĺ	Seepage	1.00	Restricted	1.00	Restricted	1.00
		Depth to bedrock	1.00	permeability		permeability	
		Too steep for	0.76	! -	:	Depth to bedrock	:
	ļ	surface	!	Slope	1.00	Too steep for	1.00
		application Sodium content	  0.08	 	1	surface	
	l I	Source concent	10.00	 	i i	application Too steep for	0.76
	i	! [	i	! [	i	sprinkler	1
	i	İ	i	İ	i	application	i
	İ	İ	İ	İ	İ	Sodium content	0.08
			1		1		
154:							[
Midway, moist	55		•	Very limited:		Very limited:	1 00
	I I	Depth to bedrock Too steep for	0.76	•	1.00 	Depth to bedrock Too steep for	11.00
	i I	surface		Depth to bedrock	1.00		
	i	application	i	Slope	11.00		í
	İ	Sodium content	0.50		İ	Restricted	1.00
		I		I		permeability	1
					I	Too steep for	0.76
		[		ļ	1	sprinkler	
	ļ		!		!	application	
	I	I	1	I	1	Sodium content	0.50

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map	   Overland flow   of wastewater 		   Rapid infiltrati   of wastewater 		   Slow rate treatm   of wastewater 	
	unit		Value	   Rating class and   limiting features		   Rating class and   limiting features	Value
154: Razor, moist	30	Seepage   Depth to bedrock   Too steep for   surface   application	1.00	permeability	1.00 		       1.00   1.00   1.00   1.00   0.76 
155: Midway	55	surface application	:		1.00	Too steep for surface	   1.00   1.00   1.00   1.00   1.00   1.00
Rock outcrop 156: Midway, moist		 	:	  Not rated      Very limited:   Restricted	          1.00	  Not rated      Very limited:   Depth to bedrock	         
		Too steep for surface application	1.00        0.50     	permeability   Depth to bedrock   Slope 	į	Too steep for surface application Too steep for sprinkler application Restricted permeability Sodium content	1.00      1.00    1.00    1.00 
Rock outcrop, moist-	30	  Not rated 	   	  Not rated 	   	  Not rated 	   
157: Nunn	   85   		    1.00       	  Very limited:   Restricted   permeability   	    1.00       		  0.84    0.08   
158: Nunn	55		      1.00 	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Restricted   permeability	      0.84 
Sampson, rarely flooded	30	Seepage	      1.00  0.40	  Very limited:   Restricted   permeability 	      1.00 	  Somewhat limited:   Restricted   permeability 	      0.84 

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater		Slow rate treatment   of wastewater 		
	   		Value	Rating class and   limiting features		Rating class and   limiting features	Value	
159: Nunn, dry	     50   		      1.00 	  Very limited:   Restricted   permeability	      1.00 	  Somewhat limited:   Restricted   permeability	      0.84 	
Sampson, dry, rarely flooded		  Very limited:   Seepage   Flooding	    1.00  0.40	  Very limited:   Restricted   permeability	    1.00	  Somewhat limited:   Restricted   permeability	    0.84	
160: Olnest	     85   	  Very limited:   Seepage 	      1.00	  Very limited:   Restricted   permeability	      1.00	  Very limited:   Filtering   capacity	      1.00	
161: Olnest	     85   	  Very limited:   Seepage	      1.00	  Very limited:   Restricted   permeability		  Somewhat limited:   Filtering   capacity	      0.01	
162: Olnest	   85         	  Very limited:   Seepage     	    1.00     	  Very limited:   Restricted   permeability   	    1.00       	  Somewhat limited:   Too steep for   surface   application   Filtering   capacity	    0.08      0.01	
163: Olnest	   90             		    1.00  0.48       	  Very limited:   Restricted   permeability   Slope 	    1.00    1.00       		   1.00   1.00   0.48   1 0.01	
164: Olney	   85       	    Very limited:   Seepage     	      1.00     	    Very limited:   Restricted   permeability   	      1.00     	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.84	
165: Olney	   85       		    1.00   	  Very limited:   Restricted   permeability 	    1.00     	  Very limited:   Filtering   capacity   Restricted   permeability	  1.00    0.84	
166: Olney	   85           	     Very limited:   Seepage       	    1.00           	    Very limited:   Restricted   permeability     	    1.00         	Very limited:   Filtering   capacity   Restricted   permeability   Too steep for   surface   application	    1.00    0.84    0.08	

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct.  Overland flow   of   of wastewater  map    unit			Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	   		Value	Rating class and	Value	Rating class and limiting features	Value
167: Olney	   90   1   1   1   1   1	!	    1.00  0.48           	  Very limited:   Restricted   permeability   slope   	    1.00    1.00         		 
168: Olney	   55                 		   1.00  0.21         	  Very limited:   Restricted   permeability   Slope   	    1.00    1.00           	Very limited:   Filtering   capacity   Too steep for   surface   application   Restricted   permeability   Too steep for   sprinkler   application	   1.00   1.00   1.00       0.84     0.21
Midway	30                 	!	  1.00  0.50  0.21     	Very limited:   Restricted   permeability   Depth to bedrock   Slope 	1.00	Very limited:   Depth to bedrock   Restricted   permeability   Too steep for   surface   application   Sodium content   Too steep for   sprinkler   application	  1.00  1.00    1.00    0.50  0.21
169: Otero	     85     	  Very limited:   Seepage   	      1.00 	  Somewhat limited:   Restricted   permeability 	      0.96 	  Somewhat limited:   Filtering   capacity 	      0.01 
170: Oterodry	   85   		    1.00 	  Somewhat limited:   Restricted   permeability	    0.96 	  Somewhat limited:   Filtering   capacity	    0.01 
171: Oterodry	   85             	Seepage	    1.00  0.05       	  Somewhat limited:   Restricted   permeability   Slope   	    0.96    0.86     	Somewhat limited:   Too steep for surface application   Too steep for sprinkler application   Filtering capacity	    0.91    0.05      0.01

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	of wastewater		Rapid infiltration of wastewater		Slow rate treatment   of wastewater 		
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	Value	
172: Platner	     85   	!	      0.77 	    Very limited:   Restricted   permeability	      1.00 	    Somewhat limited:   Restricted   permeability	      0.84 	
173: Platner	   50 	!	      0.77	  Very limited:   Restricted   permeability	      1.00	  Somewhat limited:   Restricted   permeability	    0.84	
Ascalon	   35     		    1.00   	  Very limited:   Restricted   permeability 	    1.00   	  Somewhat limited:   Filtering   capacity 	    0.01 	
174: Pleasant, rarely ponded	   90       	Seepage	      1.00  1.00 	permeability	      1.00    1.00	  Very limited:   Depth to   saturated zone   Restricted   permeability	      1.00    1.00	
175: Rago, rarely flooded	     90   	  Somewhat limited:   Seepage   Flooding	    0.77  0.40	!	      1.00	  Very limited:   Restricted   permeability		
176: Rago, dry, rarely flooded	     90   	Seepage	        0.77  0.40	!	        1.00	    Very limited:   Restricted   permeability	        1.00	
177: Razor	   85         	Depth to bedrock	1.00	permeability	1.00	  Very limited:   Restricted   permeability   Depth to bedrock   Sodium content	  1.00    1.00  1.00	
178: Razor, moist	   85       	Seepage   Depth to bedrock	1.00	permeability	1.00	permeability	  1.00    1.00  1.00	
179: Sampson, rarely flooded	     90   	:	      1.00  0.40	!	        1.00	      Somewhat limited:   Restricted   permeability 	      0.84	
180: Sampson, dry, rarely flooded		:	      1.00  0.40	    Very limited:   Restricted   permeability 	      1.00 	  Somewhat limited:   Restricted   permeability	      0.84 	

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	unit   		Value	Rating class and   limiting features	Value	Rating class and   limiting features	Value
181: Satanta	   90         	  Very limited:   Seepage     	      1.00     	  Very limited:   Restricted   permeability 	      1.00     	  Somewhat limited:   Restricted   permeability   Filtering   capacity	    0.84    0.01
182: Satanta, dry	   90         	  Very limited:   Seepage     	    1.00       	  Very limited:   Restricted   permeability 	    1.00       	  Somewhat limited:   Restricted   permeability   Filtering   capacity	    0.84    0.01 
183: Seldom, rarely flooded	   85           	  Very limited:   Seepage   Depth to   saturated zone   Flooding	    1.00  1.00    0.40	  Very limited:   Restricted   permeability   Depth to   saturated zone	    1.00    1.00   	  Very limited:   Depth to   saturated zone   Restricted   permeability   Filtering   capacity	    1.00    0.84    0.01
184: Shingle	   55           	  Very limited:   Depth to bedrock   Seepage   	:	  Very limited:   Restricted   permeability   Depth to bedrock   Slope	1.00		    1.00  0.84    0.31
Midway	   30             	  Very limited:   Depth to bedrock   Sodium content   	•	  Very limited:   Restricted   permeability   Depth to bedrock   Slope 	1.00 	Restricted	  1.00  1.00    0.50  0.31 
185: Shingle, moist	55           	  Very limited:   Depth to bedrock   Seepage   		  Very limited:   Restricted   permeability   Depth to bedrock   Slope	1.00 	Restricted permeability	  1.00  0.84    0.31
Midway, moist	   30             	  Very limited:   Depth to bedrock   Sodium content     	•	   Very limited:   Restricted   permeability   Depth to bedrock   Slope 	1.00 	! -	  1.00  1.00    0.50  0.31 

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map			Rapid infiltrati of wastewater		Slow rate treatm   of wastewater 	
	unit   		Value	Rating class and	•	Rating class and	Value
186: Sundance	   85     	_	      1.00   	  Very limited:   Restricted   permeability 	      1.00   	  Very limited:   Filtering   capacity   Restricted   permeability	    1.00    0.84
187: Table Mountain, rarely flooded	       85   	Seepage	        1.00  0.40	!	        1.00	      Not limited   	
188: Travessilla	   60               	Seepage Depth to bedrock	1.00		•	Very limited:   Depth to bedrock   Too steep for   surface   application   Too steep for   sprinkler   application   Filtering   capacity	  1.00  1.00      1.00      0.01
Rock outcrop	25	  Not rated		  Not rated		  Not rated	
189: Truckton	     85     	_	      1.00   	  Somewhat limited:   Restricted   permeability	      0.96 	  Very limited:   Filtering   capacity 	      1.00
190: Truckton	   85             	Seepage	  1.00  0.05       	'	  0.96    0.86     	Very limited:   Filtering   capacity   Too steep for   surface   application   Too steep for   sprinkler   application	  1.00    0.91    0.05
191: Truckton, dry	   85     		      1.00 	  Somewhat limited:   Restricted   permeability	    0.96 	  Very limited:   Filtering   capacity	    1.00
192: Truckton, dry	   85             	Seepage	    1.00  0.05       	•	    0.96    0.86     	   Very limited:   Filtering   capacity   Too steep for   surface   application   Too steep for   sprinkler   application	  1.00    0.91      0.05

Table 14b.--Agricultural Waste Management--Continued

	Pct. of	•		Rapid infiltrati   of wastewater		Slow rate treatm   of wastewater	
	map	:					
	unit	•		İ		ĺ	
		Rating class and	Value	Rating class and	Value	Rating class and	Value
	L	limiting features		limiting features		limiting features	
			!				!
193:	   0E		1		1		
Valent	05 	Very limited:   Seepage	1.00	Very limited:   Slope	1.00	Very limited:   Filtering	1 1.00
	 		1.00	blobe	1	capacity	1
	l I	surface	1	! 		Too steep for	1 1.00
	i	application	i	! 	i	surface	1
	i		i	! 	i	application	i
	i		i		i	Too steep for	1.00
	i	İ	i	i	i	sprinkler	i
	i	İ	i	İ	į	application	į
	ĺ	ĺ	İ	ĺ	İ		Ì
194:			1				
Valent	55	Very limited:		Somewhat limited:		Very limited:	
			1.00	Slope	0.86	Filtering	1.00
	!		0.05		ļ	capacity	
		surface	!		!	Too steep for	0.91
		application	!		!	surface	
	 	l I	1		1	application	10.05
	 	 	!	 		Too steep for sprinkler	0.05
	 	 	1	 	l I	application	1
	l I	 	i	! 		application	1
Bijou	30	  Very limited:	i	Somewhat limited:	i	  Very limited:	i
-	i	Seepage	1.00	Restricted	0.96	Filtering	1.00
	İ	Too steep for	0.05	permeability	į	capacity	i
	ĺ	surface	ĺ	Slope	0.86	Too steep for	0.91
		application	1			surface	
						application	
						Too steep for	0.05
			1			sprinkler	
	ļ		!		!	application	!
105			!		!		!
195: Valent	   60	  Very limited:	!	  Very limited:		  Very limited:	
valenc	60 	Seepage	1.00	Slope	1.00	Filtering	1 1.00
	i I		1.00	Diope	1	capacity	1
	i	surface			i	Too steep for	1.00
	i	application	i	İ	i	surface	i
	İ	İ	İ	İ	į	application	i
	ĺ		ĺ	ĺ	ĺ	Too steep for	1.00
						sprinkler	
			1			application	
		<u>.</u>	ļ.		!	<u> </u>	ļ
Vona	30	:		Very limited:	•	Very limited:	
	1	Seepage	1.00	•	1.00		1.00
	l I	•	0.48	•	0.96		1 00
	I I	surface application		permeability	 	Too steep for surface	1.00
	I I	application	1	! 		application	1
	i	! 	<u> </u>	i I		Too steep for	0.48
	i	i İ	i	i I	i	sprinkler	1
	i	i İ	i	i	i	application	í
	i	I	i	i	i	 I	í

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater		Slow rate treatment   of wastewater 	
		Rating class and limiting features	•	   Rating class and   limiting features		Rating class and limiting features	Value
106							1
196: Valent	   55 	  Very limited:   Seepage	1.00	  Very limited:   Slope	1.00		1
	   	Too steep for surface application	1.00   	 	   	capacity Too steep for surface	1.00
	       	 	     	 	     	application Too steep for sprinkler application	  1.00   
Vonid	35	Seepage	1.00		1.00		1.00
	     	Too steep for   surface   application 	0.48     	Restricted   permeability   	0.96     	capacity Too steep for surface application	  1.00   
	 	 	     	 	     	Too steep for sprinkler application	0.48
197:	i		i	 	i	 	i
Vona	85   	   Seepage 	  1.00 	Somewhat limited:   Restricted   permeability	  0.96 	Very limited:   Filtering   capacity	  1.00 
	   	 	   	Slope   	0.12   	Too steep for surface application	0.31   
198:		 		 		 	
	   85     	  Very limited:   Seepage   	  1.00 	  Somewhat limited:   Restricted   permeability 	  0.96 	  Somewhat limited:   Filtering   capacity 	  0.01 
199:	į		į	į	į	ĺ	į
Vona	85     	Very limited:   Seepage   Too steep for   surface	  1.00  0.48	Very limited:   Slope   Restricted   permeability	  1.00  0.96	<u> </u>	  1.00 
	     	application	     	 	     	Too steep for sprinkler application	0.48
	   	 	     	 	     	Filtering   capacity	0.01
200:		 	İ		İ	 	İ
Vona	35   	Seepage Too steep for	  1.00  0.21	Restricted	  1.00  0.96	surface	  1.00 
	     	surface   application   	     	permeability     	     	application   Too steep for   sprinkler   application	  0.21   
	 		į Į	 	į Į	Filtering   capacity	0.01

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	unit	 	Value	Rating class and	•		Value
		limiting features		limiting features	l	limiting features	
200: Karval	     30 		      1.00	    Very limited:   Slope	      1.00	    Very limited:   Filtering   capacity	1.00
	     	surface application Too acid	      0.42	 	   	Too steep for surface application	1.00
	     	 	     	 	   	Too steep for   sprinkler   application   Too acid	1.00        0.42
Midway, moist	20	  Very limited:   Depth to bedrock		  Very limited:   Slope	    1.00	  Very limited:   Depth to bedrock	
	   	<u>.                                      </u>	1.00	Restricted   permeability   Depth to bedrock	1.00	Too steep for surface	1.00
	     		  0.50   	Depth to Demock	     	Too steep for sprinkler application	  1.00   
	     	 	     	 	     	Restricted   permeability   Sodium content	1.00    0.50
201: Vona	   55   	Too steep for	    1.00  0.21	  Very limited:   Slope   Restricted	    1.00  0.96	  Very limited:   Too steep for   surface	1.00
	     	surface   application   	     	permeability   	     	application Too steep for sprinkler application	0.21
	   	   	   	   	   	Filtering   capacity 	0.01   
Midway, moist	30   	Depth to bedrock		Very limited:   Restricted   permeability	  1.00 	Very limited:   Depth to bedrock   Restricted	  1.00  1.00
	     	Too steep for surface application	0.21     	Depth to bedrock Slope	1.00  1.00 	permeability   Too steep for   sirface   application	  1.00 
	       	 	       	 	       	Sodium content Too steep for sprinkler application	0.50  0.21   
202: Vona	   60   		    1.00  1.00	Restricted	    1.00  0.96	  Very limited:   Too steep for   surface	1.00
	     	surface application	       	permeability   	     	application Too steep for sprinkler application	  1.00 
	   	   	   	   	   	Filtering   capacity 	0.01

Table 14b.--Agricultural Waste Management--Continued

Map symbol and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater		Slow rate treatm of wastewater	
	   		Value	Rating class and   limiting features		Rating class and limiting features	Value
202: Seldom	   20               	  Very limited:   Seepage   Depth to   saturated zone   Too steep for   surface   application	      1.00  1.00    1.00     	•	    1.00    1.00    1.00		    1.00    1.00    1.00      0.84
	   	 	 	 	 	permeability Filtering capacity	0.01
203: Vonid	   85         	  Very limited:   Seepage     	      1.00       	  Somewhat limited:   Restricted   permeability   Slope 	    0.96    0.12 	  Very limited:   Filtering   capacity   Too steep for   surface   application	    1.00    0.31
204: Vonid	     85     	  -  Very limited:   Seepage  -	      1.00 	  -  Somewhat limited:   Restricted   permeability 	    0.96 	  -  Somewhat limited:   Filtering   capacity	    0.01 
205: Vonid	   85           	Seepage	  1.00  0.48       		  1.00  0.96       	  Very limited:   Too steep for   surface   application   Too steep for   sprinkler   application   Filtering   capacity	   1.00     0.48     0.01
206: Vonid	   35           	  Very limited:   Seepage   Too steep for   surface   application 	    1.00  0.21     	•	    1.00  0.96     	•	    1.00    0.21   
Karval	   30               		   1.00  1.00   1.00       0.42 	  Very limited:   Slope           	    1.00               	capacity  Very limited:  Filtering  capacity  Too steep for  surface  application  Too steep for  sprinkler  application  Too acid	    1.00    1.00    1.00    1.00

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct. of map unit	of wastewater		Rapid infiltrati of wastewater	Slow rate treatm of wastewater		
	 		Value	Rating class and limiting features	Value 	Rating class and limiting features	Value
206: Midway	   20   1   1   1   1   1   1	  Very limited:   Depth to bedrock   Too steep for   surface   application   Sodium content 	      1.00  1.00     	!	1.00  1.00 		    1.00  1.00    1.00    1.00    1.00
207: Vonid	   55               	  Very limited:   Seepage   Too steep for   surface   application 	   1.00  0.21 		    1.00  0.96       		        1.00        0.21        0.01
Midway	30                   	Very limited:   Depth to bedrock   Sodium content   Too steep for   surface   application	:	permeability	1.00	Very limited:    Depth to bedrock     Restricted     permeability     Too steep for     surface     application     Sodium content     Too steep for     sprinkler     application	  1.00  1.00    1.00    0.50  0.21
208: Vonid	   65             		  1.00  1.00         		  1.00  0.96       	•	    1.00    1.00      0.01
Seldom	   20                   		  1.00  1.00    1.00       	permeability Depth to	   1.00   1.00   1.00   1.00   1   1	Very limited:   Depth to   saturated zone   Too steep for   surface   application   Too steep for   sprinkler   application   Restricted   permeability   Filtering   capacity	  1.00    1.00    1.00      0.84    0.01

Table 14b.--Agricultural Waste Management--Continued

and soil name	Pct.   Pct.   of   map   unit	of wastewater		Rapid infiltrati   of wastewater 		Slow rate treatm   of wastewater 	
	unic   		:	   Rating class and   limiting features	•	   Rating class and   limiting features	Value
209: Wages	   85       	    Very limited:   Seepage     	      1.00     	  Very limited:   Restricted   permeability 	      1.00     	  Somewhat limited:   Restricted   permeability   Too steep for   surface   application	    0.84    0.08
210: Wages	   85             	  Very limited:   Seepage   Too steep for   surface   application 	    1.00  0.48       		    1.00    1.00     		      1.00        0.84        0.48
211: Wages, dry	   85     	  Very limited:   Seepage   	    1.00 	  Very limited:   Restricted   permeability	    1.00 	  Somewhat limited:   Restricted   permeability	    0.84 
212: Wages	   60           	Very limited: Seepage Too steep for surface application	  1.00  0.93       		  1.00    1.00     	Very limited:   Too steep for   surface   application   Too steep for   sprinkler   application   Restricted   permeability	  1.00    0.93    0.84
Karval	   25             		  1.00  0.93      0.42 	 	  1.00               		  1.00    1.00    1.00    0.93 
213: Weld	     85   	•	      0.77 	    Very limited:   Restricted   permeability	      1.00	    Somewhat limited:   Restricted   permeability	      0.84 
214: Weld, dry	   85   	•	    0.77 	  -  Very limited:   Restricted   permeability 	    1.00 	  Somewhat limited:   Restricted   permeability	    0.84 
215: Wiley	   85     	:	    0.77   	  Very limited:   Restricted   permeability 		  Somewhat limited:   Restricted   permeability	    0.84 

Table 14b.--Agricultural Waste Management--Continued

Map symbol	Pct.	Overland flow		Rapid infiltrati	on	Slow rate treatment		
and soil name	of	of wastewater		of wastewater		of wastewater		
	map							
	unit	<u> </u>						
		Rating class and	Value	Rating class and	Value	Rating class and	Value	
		limiting features		limiting features		limiting features		
216:								
Wiley	85	Somewhat limited:		Very limited:		Very limited:		
		Seepage	0.77	Restricted	1.00	Too steep for	1.00	
		Too steep for	0.21	permeability		surface		
		surface		Slope	1.00	application		
		application				Restricted	0.84	
						permeability		
						Too steep for	0.21	
						sprinkler		
						application		
217:								
Wilid	85	Very limited:		Very limited:		Not limited		
		Seepage	1.00	Restricted	1.00			
				permeability				
218:								
Water	90	Not rated		Not rated		Not rated		
219:								
Gravel pits	100	Not rated		Not rated		Not rated		
220:								
Access denied	100	Not rated		Not rated		Not rated		

## Table 15a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

and soil name	Pct. of map	gravel	of	Potential source	of
	map  unit			 	
	 	Rating class and limiting features		Rating class and   limiting features	Value
101: Apishapa, rarely ponded	       90 	      Poor:   Bottom layer		      Poor:   Bottom layer	        0.00
	 	Thickest layer 	0.00 	Thickest layer 	0.00 
102: Arvada	   85 	_	0.00	  Poor:   Bottom layer   Thickest layer	    0.00  0.00
103: Ascalon	     85   	-	0.00		      0.00  0.01
104: Ascalon	     85 	•	0.00	  Fair:   Bottom layer   Thickest layer	    0.00  0.01
105: Ascalon	     85   		0.00	    Fair:   Bottom layer   Thickest layer	      0.00  0.01
106: Ascalon, dry	     85 	Bottom layer			      0.00  0.01
107: Ascalon, dry	     85   	Bottom layer	0.00	  Fair:   Bottom layer   Thickest layer	    0.00  0.01
108: Ascalon, dry	     85   	_	0.00	  Fair:   Bottom layer   Thickest layer	    0.00  0.01
109: Ascalon	     55   		0.00	  Fair:   Bottom layer   Thickest layer	    0.00  0.01
Haxtun	   30   			•	  0.00  0.00
110: Ascalon, dry	     55   	Bottom layer	0.00	  Fair:   Bottom layer   Thickest layer	      0.00  0.01

Table 15a.--Construction Materials--Continued

	1			 I	
and soil name	  Pct.   of  map	gravel	of	   Potential source   sand 	of
	unit	:		! [	
	•	Rating class and limiting features	•	Rating class and limiting features	Value 
110: Haxtum, dry	     30 	Bottom layer	0.00		      0.00
111: Bacid	     85   	:	0.00		      0.00
112: Bankard, occasionally flooded	       55   	:	0.00		          0.12
Glenberg, occasionally flooded	   30   	Bottom layer	0.00	  Fair:   Thickest layer   Bottom layer	0.03
113: Bijou	     90   	:	0.00	:	      0.08  0.33
114: Bijou, moist	     90   	Bottom layer	:	:	0.08
115: Bijou, moist	     90   	· -	0.00		    0.08  0.33
116: Blakeland	   85     	•	    0.00  0.00		    0.12  0.33
117: Bresser	   85   	:	0.00		    0.00  0.11
118: Campo	   85     	:		· -	      0.00  0.00
119: Canyon	   55   	· -	    0.00  0.00	· -	    0.00  0.00
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   

Table 15a.--Construction Materials--Continued

and soil name	  Pct.   of  map  unit	į	of	   Potential source   sand 	e of
	•	Rating class and	•	Rating class and limiting features	•
	l		 		 
120: Colby	85 85		0.00	·	    0.00  0.00
121:			i	 	i
Colby	85     	•	0.00	Poor:   Bottom layer   Thickest layer	  0.00  0.00
122:		! 	i	! 	i
Colby	50 	Poor:   Bottom layer		Poor:   Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Weld	   40   		0.00	  Poor:   Bottom layer   Thickest layer	  0.00  0.00
123:	İ	İ	i	 	i
Firstview	85   	Bottom layer	0.00	Poor:   Bottom layer   Thickest layer	  0.00  0.00
	İ				
124: Fort Collins	   90 	•		  Poor:   Bottom layer	
	 			Thickest layer	0.00
125: Fort Collins	     85 	:	:	    Poor:   Bottom layer	      0.00
	İ			Thickest layer	0.00
126: Fort Collins	     55	    Poor:	   	    Poor:	   
	ĺ			·	0.00
	l I	Thickest layer	0.00	Thickest layer	0.00
Karval	   35 	•	•	  Fair:   Thickest layer	0.09
		Thickest layer	0.00	Bottom layer	0.33
127:	 	 	 	 	
Fort Collins	50	!	:	Poor:	į
	l i	•		Bottom layer   Thickest layer	0.00
	 	Inickest layer		Inickest layer	
Platner	35	Poor:	:	Poor:	
	   	:	:	Bottom layer   Thickest layer	0.00
128:		İ	İ	İ	i
Fort Collins	50 	!	:	Poor:	0.00
	   	:	:	Bottom layer   Thickest layer	0.00
Razor, moist	   40	Poor:		  Poor:	
		Bottom layer	0.00	Bottom layer	0.00
	1	Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

and soil name	Pct. of map	gravel	of	Potential source	of
	unit   	Rating class and limiting features	:	Rating class and limiting features	:
129: Fort	     85   	:	0.00		      0.00  0.00
130: Fort	     85   	:	0.00		      0.00  0.00
131: Fort	     55   	:	0.00		      0.00  0.00
Karval	   35     	•	0.00		    0.09  0.33
132: Fort	   50 	:	0.00	:	    0.00  0.00
Razor	   40   	:	:	:	    0.00  0.00
133: Haversid, rarely flooded	     85     	:	0.00		      0.00  0.00
134: Haverson, rarely flooded	   85     	Bottom layer	•	  Poor:   Bottom layer   Thickest layer	      0.00  0.00
135: Haxtun	     85   	Bottom layer	0.00	:	    0.00  0.00
136: Haxtun, dry	     85     	Bottom layer	0.00	:	      0.00  0.00
137: Haxtun, dry	   55   	Bottom layer	0.00		    0.00  0.00
Olney	   30     		0.00		    0.03  0.04

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of	•	of	Potential source	of
	map	İ			
	unit				
	 	Rating class and limiting features	•	Rating class and limiting features	•
		[			
138:					
Haxtun	55	Poor:		Poor:	!
	!	:	:		0.00
		Thickest layer	0.00	Thickest layer	0.00
Olnest	   20	  Poor:	 	  Fair:	!
OINEBC	1 30	•			0.04
	i	:	:		0.04
	i				
139:	i	İ	İ	İ	i
Keith	85	Poor:	ĺ	Poor:	Ī
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
	!	<u> </u>			!
140:					!
Keith	85	Poor:		Poor:	10.00
		:	:		0.00
	1	Inickest layer	10.00	Thickest layer	10.00
141:		! 	i i	 	i
Kim	90	Poor:	i	Poor:	i
	i	•	0.00	Bottom layer	0.00
	į	Thickest layer	0.00	Thickest layer	0.00
	İ	ĺ	ĺ		Ī
142:					
Kim	90	Poor:		Poor:	
	!	:	:		0.00
		Thickest layer	10.00	Thickest layer	0.00
143:		l I	 	l I	!
Kimst	l 90	Poor:	i	Poor:	i
	i	!	:		0.00
	į	Thickest layer	0.00	Thickest layer	0.00
144:					
Kimst	90	Poor:		Poor:	
		:	:		0.00
		Thickest layer	10.00	Thickest layer	0.00
145:		! 	! !	 	1
Las Animas,	i	! 	i	! 	i
occasionally	i	İ	i	İ	i
flooded	85	Poor:	İ	Fair:	İ
	İ	Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.08
		<u> </u>			
146:					
Limon, rarely flooded	   0=	  Boome	 	   Boome	1
T100ded	ا می	Poor:   Bottom layer	  0.00	Poor:   Bottom layer	0.00
	1	•	0.00	Thickest layer	0.00
	i				
147:	i	i İ	i		i
Limon, moist, rarely	·Í	İ	İ		İ
flooded	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
		I	I	1	I

Table 15a.--Construction Materials--Continued

and soil name	Pct. Of map	gravel	of	   Potential source   sand 	of
	unit			İ	
	 	Rating class and limiting features	:	Rating class and limiting features	Value 
	!	!		<u> </u>	!
148:			!		
Manzanola	85 	Poor:   Bottom layer	0.00	Poor:   Bottom layer	  0.00
	! 		0.00	:	0.00
	İ	İ	İ	İ	İ
149:					
Manzanst, rarely		   Parasas	!	   Barana	
flooded	90 	Bottom layer	0.00	Poor:   Bottom layer	0.00
	i I	Thickest layer	0.00	Thickest layer	0.00
	İ				
150:				l	
Manzanst	85	Poor:	:	Poor:	
		Bottom layer	0.00	:	0.00
	l I	Thickest layer	0.00 	Thickest layer	0.00 
151:	i		i	! 	i
Midway	85	Poor:	i	Poor:	İ
		Bottom layer	0.00	Bottom layer	0.00
	ļ	Thickest layer	0.00	Thickest layer	0.00
152:			1	  -	
Midway, moist	l I 85	  Poor:	i	  Poor:	1
mana, morpo			:	Bottom layer	0.00
	į	Thickest layer	0.00	Thickest layer	0.00
		<u> </u>		ļ	
153:		   Parama		   Parasas	
Midway	55 	Poor:   Bottom layer	:	Poor:   Bottom layer	0.00
	! 	Thickest layer	0.00		0.00
	İ	İ	İ	İ	İ
Razor	30	Poor:	1	Poor:	
		Bottom layer	:	Bottom layer	0.00
	 	Thickest layer	0.00	Thickest layer	0.00
154:	! 	! 		! 	
Midway, moist	55	Poor:	i	Poor:	į
		Bottom layer	0.00	Bottom layer	0.00
	ļ	Thickest layer	0.00	Thickest layer	0.00
Daram maist		  Peems		  Peeme	
Razor, moist	30 	•	•	Poor:   Bottom layer	0.00
	İ			Thickest layer	0.00
	i	i -	i	i -	i
155:	!	!	!	!	!
Midway	55	•	•	Poor:	
	l I		0.00	:	0.00
	 	Inickest layer	1	Inickest layer	10.00
Rock outcrop	30	Not rated	i	  Not rated	i
	l	I		I	
156:					
Midway, moist	55 		:	Poor:	10.00
	I I	•	0.00	•	0.00
	i				
Rock outcrop, moist-	30	Not rated	į	Not rated	į
	l	I		l	

Table 15a.--Construction Materials--Continued

and soil name	Pct. of map	•	of	Potential source	of
	unit	:		İ	
	 	Rating class and limiting features	:	Rating class and limiting features	•
				l	
157: Nunn	   85     	:	0.00	·	  0.00  0.00
158:	İ		i	<u> </u>	i
Nunn	55     	:	0.00	:	  0.00  0.00
Sampson, rarely	İ	İ	i	 	i
flooded	30   	Bottom layer	0.00	Poor:   Bottom layer   Thickest layer	  0.00  0.00
159:	 	 		! 	
Nunn, dry	50	:	:	Poor:	!
	   	:	:		0.00  0.00
Sampson, dry, rarely	i	İ	i	İ	i
flooded	35	!	:	Poor:	
	   	:	:	Bottom layer   Thickest layer 	0.00
160:	i	İ	i	İ	i
Olnest	85   	:	0.00	:	0.04
161:	 	 	1	 	
Olnest	85	Poor:	i	Fair:	i
	   	:	:	Bottom layer   Thickest layer 	0.04  0.04
162:	İ	İ	i	İ	i
Olnest	85 	Poor:   Bottom layer	!	Fair:   Bottom layer	0.04
	   	•	•	:	0.04
163:	İ	İ	i	 	i
Olnest	90	•	•	Fair:	
	   	•	•	Bottom layer   Thickest layer	0.04
164:		 		 	
Olney	85	Poor:	:	Fair:	
	 	•	0.00	Thickest layer   Bottom layer	0.03
165:		! 		 	
Olney	85	Poor:	:	Fair:	
	 	:	0.00	Thickest layer   Bottom layer	0.03
166:	 	 		 	
Olney	85	Poor:	:	Fair:	
	l I	Bottom layer   Thickest layer	0.00  0.00	Thickest layer Bottom layer	0.03
	i				

Table 15a.--Construction Materials--Continued

and soil name	Pct. of map	gravel	of	Potential source sand	of
	unit	Rating class and	•		Value
		limiting features		limiting features	
167: Olney	     90   	  Poor:   Bottom layer   Thickest layer	0.00		      0.03  0.04
168: Olney	     55   	:	0.00		      0.03
Midway	   30   	  Poor:   Bottom layer   Thickest layer	0.00		    0.00  0.00
169: Otero	     85	    Poor:	   	    Fair:	   
	 	Bottom layer   Thickest layer	:	Thickest layer Bottom layer	0.08
170: Oterodry	     85   	    Poor:   Bottom layer   Thickest layer	0.00	:	      0.03  0.04
171: Oterodry	     85   	  Poor:   Bottom layer   Thickest layer	0.00		      0.03  0.04
172: Platner	     85   	  Poor:   Bottom layer   Thickest layer	0.00		      0.00
173: Platner	     50 	  Poor:   Bottom layer   Thickest layer	0.00	· -	      0.00  0.00
Ascalon	   35     	  Poor:   Bottom layer   Thickest layer 	0.00	  Fair:   Bottom layer   Thickest layer 	    0.00  0.01
174: Pleasant, rarely ponded	     90     	Bottom layer	0.00		      0.00  0.00
175: Rago, rarely flooded	   90   	  Poor:   Bottom layer   Thickest layer	    0.00  0.00		    0.00  0.00
176: Rago, dry, rarely flooded	       90   	    Poor:   Bottom layer   Thickest layer 	      0.00  0.00	:	        0.00  0.00

Table 15a.--Construction Materials--Continued

and soil name	  Pct.   of  map	gravel	of	   Potential source   sand	of
	unit	:		 	
	•	Rating class and limiting features		Rating class and limiting features	•
177: Razor	   85     	  Poor:   Bottom layer   Thickest layer 	0.00		  0.00  0.00
178:	i	į	i	İ	i
Razor, moist	85     	Bottom layer	0.00	Poor:   Bottom layer   Thickest layer 	  0.00  0.00
179:	į	İ	į	İ	i
Sampson, rarely flooded	   90     	Bottom layer	•	  Poor:   Bottom layer   Thickest layer 	  0.00  0.00
180:	İ	İ	İ	İ	İ
Sampson, dry, rarely flooded		Bottom layer	0.00	  Poor:   Bottom layer   Thickest layer 	  0.00  0.00
181:	i	į	i	İ	i
Satanta	90   	Bottom layer	0.00	Poor:   Bottom layer   Thickest layer	  0.00  0.00
100					
182: Satanta, dry	   90 	:	:	  Poor:   Bottom layer	    0.00
	ĺ	Thickest layer	0.00	Thickest layer	0.00
183: Seldom, rarely flooded	       85	    -  Poor:	:	    -  Fair:	
	 	•	•	Bottom layer   Thickest layer	0.03
	i	i -	i	i	i
184: Shingle		  Peems		  Poor:	
biiiiigie	33	•	0.00	•	0.00
	ļ	Thickest layer	0.00	Thickest layer	0.00
Midway	   30	  Poor:	 	  Poor:	1
		:	:	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
185:	 	 	 	 	1
Shingle, moist	55	Poor:	i	Poor:	i
		:	:	Bottom layer	0.00
	l I	Thickest layer 	0.00 	Thickest layer 	0.00 
Midway, moist	30	Poor:	i	Poor:	i
		Bottom layer	•	Bottom layer	0.00
	 	Thickest layer 	0.00 	Thickest layer 	0.00 
186:	į	į	į	į	į
Sundance	85 	!	:	Poor:	  0.00
	 	Thickest layer	:	Bottom layer   Thickest layer	0.00
	ĺ	İ	İ	İ	İ

Table 15a.--Construction Materials--Continued

and soil name	Pct. of map	gravel	of	   Potential source   sand 	of
	unit   	   Rating class and   limiting features		Rating class and limiting features	Value
187: Table Mountain, rarely flooded	       85   	Bottom layer	0.00		        0.00  0.00
188: Travessilla	   60   	Bottom layer	0.00		    0.00  0.00
Rock outcrop	   25 	  Not rated 	   	  Not rated 	   
189: Truckton	   85     	  Poor:   Bottom layer   Thickest layer	0.00	  Fair:   Thickest layer   Bottom layer	    0.07  0.12
190: Truckton	   85   	Bottom layer	0.00		    0.07  0.12
191: Truckton, dry	     85   	:	:		      0.07  0.12
192: Truckton, dry	     85   	Bottom layer	0.00		      0.07  0.12
193: Valent	     85   	  Poor:   Bottom layer   Thickest layer	•		      0.33  0.90
194: Valent	   55   	  Poor:   Bottom layer   Thickest layer	0.00		    0.33  0.90
Bijou	   30     	Bottom layer	0.00	:	    0.08  0.33
195: Valent	   60   	  Poor:   Bottom layer   Thickest layer	0.00		    0.33  0.90
Vona	1   30     	•	0.00	:	    0.08  0.11
196: Valent	   55     	•	0.00		    0.33  0.90

Table 15a.--Construction Materials--Continued

	  Pct.   of	   Potential source   gravel		   Potential source   sand	e of
	map	İ		ĺ	
	unit   	Rating class and	•	   Rating class and   limiting features	•
106	ļ				
196: Vonid	   35     	Bottom layer	0.00	:	  0.08  0.11
197:	<u> </u>	! 	i	! 	i
Vona	85     	•	0.00	Fair:   Thickest layer   Bottom layer	  0.08  0.11
198:		! 		! 	
Vona	85   		0.00	Fair:   Thickest layer   Bottom layer	  0.08  0.11
199:	 	 		 	1
Vona	85   	•	0.00	  Fair:   Thickest layer   Bottom layer	0.08
200:	 	 		 	1
Vona		Poor:   Bottom layer   Thickest layer	0.00		  0.08  0.11
Karval	   30	  Poor:	 	  Fair:	
		Bottom layer	0.00	•	0.09
Midway, moist	   20	  Poor:	 	  Poor:	 
-	i I	Bottom layer	1	·	0.00
201:	 	 	 	 	1
Vona	:	Poor:	:	Fair:	
	 	Bottom layer   Thickest layer		Bottom layer	0.08
Midway, moist	   30	  Poor:		  Poor:	
	 	Bottom layer   Thickest layer		Bottom layer   Thickest layer	0.00
202:		 		 	i
Vona	60 	•	•	Fair:   Thickest layer	0.08
	   		1	Bottom layer	0.11
Seldom	20	Poor:		  Fair:	i
	 	:	:	Bottom layer   Thickest layer	0.03
203:	 	 		 	
Vonid	85	Poor:	:	Fair:	
	   	:	:	Thickest layer   Bottom layer 	0.08
204: Vonid	   85	    Poor:	 	    Fair:	
. 5.114	33	!	:	Thickest layer	0.08
	I	Thickest layer	0.00	Bottom layer	0.11

Table 15a.--Construction Materials--Continued

and soil name	Pct. of map	gravel	of	Potential source	of
	unit	:			
		Rating class and limiting features	•	Rating class and limiting features	
	!		!		
205: Vonid	   85     	  Poor:   Bottom layer   Thickest layer	0.00	  Fair:   Thickest layer   Bottom layer	  0.08  0.11
206:	İ	! [	i	! [	i
Vonid	35   	Poor:   Bottom layer   Thickest layer	0.00	  Fair:   Thickest layer   Bottom layer	0.08
Karval	   30   	  Poor:   Bottom layer   Thickest layer	0.00	  Fair:   Thickest layer   Bottom layer	  0.09  0.33
*** 1					
Midway	20 	Poor:   Bottom layer	!	Poor:   Bottom layer	  0.00
	   	Thickest layer	:	Thickest layer	0.00
207:	İ		İ		i
Vonid	55	Poor:	!	Fair:	
	 	Bottom layer   Thickest layer	:	Thickest layer   Bottom layer	0.08
Midway	   30	  Poor:	 	  Poor:	
	į	:	:	Bottom layer	0.00
	 	Thickest layer 	0.00 	Thickest layer 	0.00 
208:	i	İ	i	İ	i
Vonid	65	Poor:	:	Fair:	
	 	Bottom layer   Thickest layer	:	Thickest layer   Bottom layer	0.08
Seldom		  Poor:		  Fair:	
serdom	20 	Bottom layer	:	Bottom layer	0.03
	į	Thickest layer	0.00		0.08
209:	 	 	 	 	 
Wages	   85	Poor:	i	Poor:	i
		Bottom layer	:	Bottom layer	0.00
	 	Thickest layer 		Thickest layer 	0.00
210:					
Wages	85 	Poor:   Bottom layer	  0.00	Poor:   Bottom layer	0.00
	!   	Thickest layer	0.00		0.00
211:	 	 		 	
Wages, dry	85	!	:	Poor:	
	 	Bottom layer   Thickest layer	0.00		0.00
212:	 	 	 	 	
Wages	60	  Poor:		  Poor:	1
	ļ.	Bottom layer	:	Bottom layer	0.00
	 	Thickest layer 	0.00 	Thickest layer 	0.00 
Karval	25	Poor:	İ	  Fair:	i
	ļ	Bottom layer	0.00		0.09
	I	Thickest layer	0.00	Bottom layer	0.33

Table 15a.--Construction Materials--Continued

Map symbol	Pct.	Potential source	of	Potential source	of
and soil name	of	gravel		sand	
	map				
	unit				
		Rating class and	Value	Rating class and	Value
		limiting features		limiting features	
213:					
Weld	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
214:					
Weld, dry	85	Poor:		Poor:	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
215:					
Wiley	85	Poor:		Poor:	
		Bottom layer	0.00	-	0.00
		Thickest layer	0.00	Thickest layer	0.00
		  -	!		!
216:		   D	!	   D =	!
Wiley	85	Poor:		Poor:	10.00
		<u>.                                      </u>	:	Bottom layer	0.00
	 	Thickest layer	10.00	Thickest layer	0.00
217:	 	l I	!	l I	
Wilid	   0E	  Poor:	!	  Poor:	
WIIIG	1 02	Bottom layer	:	Bottom layer	0.00
	l I	Thickest layer	•	Thickest layer	0.00
	l I	INICKESC Tayer	10.00	Inickest layer	10.00
218:	l I	l I	!	 	1
	l I an	  Not rated	i	  Not rated	i
Macer	1	Not Tated 		NOC Taced 	
219:	i I	 	1	 	
Gravel pits	l 1100	Not rated	1	  Not rated	i
	1		1		i
220:	i	! 	1	! 	i
Access denied	100	Not rated	i	Not rated	i
	1	1	1		1

## Table 15b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

101:   Apishapa, rarely	unit			Potential source of roadfill		Potential source of   topsoil 		
Apishapa, rarely		limiting features	•	   Rating class and   limiting features	•	_	•	
Apishapa, rarely			   	 	 	   	İ	
		 	i	İ	i		i	
ponded	90	Poor:	i	Poor:	i	Poor:	i	
	-	•		•	0.00	'	0.00	
i		•	0.12	•		Depth to	0.00	
i I		organic matter	•	Low strength	0.00  0.12	saturated zone	i I	
102:		 	 	 	 	 		
Arvada	85	Poor:	i	Poor:	i	Poor:	i	
i		Too clayey	0.00	Low strength	0.00	Too clayey	0.00	
i		Sodium content	0.00	Shrink-swell	0.32	Sodium content	0.00	
į		Low content of	0.12	Ì	į		İ	
i I		organic matter	0.88	 	 	 		
103:		 	 	 	 	 		
Ascalon	85	Fair:		Good		Good	1	
1		Low content of	0.12					
		organic matter  No water erosion	•			 		
i		No water erosion		l I	 	! 	i	
104:		İ	İ	İ	j	İ	į	
Ascalon	85	•		Good		Good	1	
1		Low content of	0.12					
!		organic matter	•	<u> </u>	!		!	
 		No water erosion	0.99 	 	 	İ		
105:		! 	İ	! 		 	i	
Ascalon	85	Fair:	į	Good	į	Good	İ	
İ		Low content of	0.12	ĺ	ĺ		İ	
1		organic matter		[			1	
[		No water erosion	0.99				!	
106:		 	 	 	 			
Ascalon, dry	85	Fair:	İ	Good	į	Good	i	
İ		Low content of	0.12	ĺ	ĺ		İ	
İ		organic matter	ĺ	ĺ	ĺ		İ	
1		No water erosion	0.99					
107:		1 	! 	! 	 	 		
Ascalon, dry	85	Fair:	i	Good	i	Good	i	
i		Low content of	0.12	İ	į		i	
İ		organic matter	ĺ	ĺ	ĺ		İ	
!		No water erosion	0.99	!			ļ.	
108:		 	 	I I	 	 	l I	
Ascalon, dry	85	  Fair:	i	Good		  Good	i	
į		Low content of	0.12		I			
į		organic matter			I			
1		No water erosion	0.99				1	

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source	of	Potential source of topsoil		
	unit   			   Rating class and   limiting features	•	   Rating class and   limiting features	Value	
109: Ascalon	     55   	:	      0.12	    Good 	       	    Good 	       	
Haxtun	     30 	No water erosion    Poor:	į	  Good 	       	    Good 	       	
110: Ascalon, dry	         55	organic matter   	 	        Good	     	        Good	       	
	       	Low content of organic matter No water erosion	0.12    0.99	İ	     	 	 	
Haxtun, dry	30       	Wind erosion	  0.00  0.88   	•	       	Good       	       	
111: Bacid	   85     	Low content of organic matter	0.12	Shrink-swell	    0.00  0.87	  Good   	       	
112: Bankard, occasionally	     	 	     	 	     	 	     	
flooded	55         	Wind erosion	  0.00  0.11  0.12    0.78	  - 	         	Fair:   Too sandy     	  0.78     	
Glenberg, occasionally flooded	     30     	  Fair:   Low content of   organic matter   Droughty	•	  Good     	         	  Good   	         	
113: Bijou	   90       	Wind erosion	    0.00  0.88    0.97	 	         	  Good     		
114: Bijou, moist	     90     	•	    0.00  0.88    0.97	   	           	  Good     		

Table 15b.--Construction Materials--Continued

and soil name	  Pct.   of  map	reclamation mater		   Potential source   roadfill 	of	   Potential source of   topsoil 	
	unit   			   Rating class and   limiting features			•
115: Bijou, moist	     90     	Wind erosion   Low content of   organic matter	    0.00  0.88    0.97	    Good     	           	    Good     	         
116: Blakeland	   85         	Wind erosion Too sandy Low content of organic matter	    0.00  0.06  0.12    0.35	 	             	  Fair:   Too sandy     	    0.06     
117: Bresser	   85         	Low content of organic matter Droughty	0.12	į	             	  Fair:   Too sandy   	      0.94     
118: Campo	   85       	:	0.12	  Fair:   Low strength   	    0.22   	  Good   	       
119: Canyon	   55       	Droughty Depth to bedrock	0.00	Depth to bedrock	0.00		    0.00  0.00  0.00
Rock outcrop	   35 	  Not rated 	   	  Not rated 	   	  Not rated 	   
120: Colby	   85     	Low content of organic matter	    0.12    0.68	  Good   	         	  Good 	         
121: Colby	     85   	Low content of organic matter	0.12	  Good   	         	  Good   	       
122: Colby	     50   	Low content of organic matter	0.12	    Good   	         	    Good   	       
Weld	   40   	  Fair:   No water erosion 	:	  Poor:   Low strength	    0.00 	  Good   	     

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source roadfill	of	Potential source topsoil	e of
	unit   			   Rating class and   limiting features	•	   Rating class and   limiting features	•
	i		i		i		i
123:				l			
Firstview	85	•		Fair:	:	Poor:	
		Wind erosion	0.00	•	0.96		0.00
		Sodium content	0.00	:	!	Salinity	0.88
		Too alkaline	0.00		!	 	
		Low content of	0.12	 	1	l I	
		organic matter	  0.88	 		 	
104							
l24: Fort Collins	   90	  Fair:	1	  Good	 	  Good	l I
	i	Low content of	0.12	İ	i		i
	i	organic matter	i	İ	i	İ	i
	į	Water erosion	0.90	į	į		į
125:	 	 	1	 	 	 	
Fort Collins	85	  Fair:	i	Good	i	Good	i
	İ	Low content of	0.12	İ	İ		i
		organic matter					
		Water erosion	0.90				
126:	i i	 	İ	 		 	
Fort Collins	55	Fair:	Ì	Good	İ	Good	İ
		Low content of	0.12				
		organic matter					
		Water erosion	0.90			 	
Karval	35	  Poor:	i	  Fair:		Poor:	
	İ	Droughty	0.00	Slope	0.82	Slope	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of	0.12				
		organic matter					
		Too acid	0.84	 		 	
127:	i	! 	i	 	İ	 	i
Fort Collins	50	Fair:		Good	1	Good	
	!	Low content of	0.12	<u> </u>	!		
		organic matter Water erosion			!		
	l I	water erosion	0.90 	 	 	 	I
Platner	35	Good	i	Poor:	i	Good	i
	i	İ	i	Low strength	0.00		i
	į	İ	İ	Shrink-swell	0.98	İ	i
120.							
128: Fort Collins	   50	  Fair:		  Good		  Good	1
	İ	Low content of	0.12	İ	i		i
	į	organic matter	İ	İ	İ		į
	ļ	Water erosion	0.90	ļ	ļ	l	ļ
Razor, moist	   40	  Poor:	1	  Poor:	 	  Poor:	[ [
		Too clayey	0.00	:	0.00		0.00
	i	Depth to bedrock	•		•		•
	i	Droughty	0.68	:	0.39	:	0.84
	İ	Low content of	0.88	•	i	Salinity	0.88
		organic matter	1	I	I	Sodium content	0.98
		Sodium content	0.97				

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source roadfill	of	Potential source topsoil	of
	unit   			   Rating class and   limiting features	•	Rating class and limiting features	
129: Fort	   	Sodium content	0.60  0.88 	Shrink-swell	      0.00  0.87 		      0.60     
130: Fort	   85         	Sodium content	0.60  0.88 	Shrink-swell			    0.60     
131: Fort	į	Sodium content	0.60  0.88 	Shrink-swell		  Fair:   Sodium content   	    0.60   
Karval	i I	Droughty Wind erosion Low content of organic matter	  0.00  0.00  0.12    0.84	į	    0.82     	  Poor:   Slope   Rock fragments   	  0.00  0.00   
132: Fort	     50     	Sodium content	0.60  0.88 	Shrink-swell	      0.00  0.87 	  Fair:   Sodium content     	      0.60   
Razor	   40           	Too clayey Depth to bedrock Droughty	0.00  0.58  0.68  0.88	Depth to bedrock Shrink-swell	0.00	Depth to bedrock   Slope   Salinity	  0.00  0.58  0.84  0.88  0.98
133: Haversid, rarely flooded	     85       	Low content of organic matter Water erosion		İ	             	  -  Fair:   Sodium content     	        0.98     
134: Haverson, rarely flooded	   85       	 	0.12	İ	;           	    Fair:   Salinity   	      0.50   

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater 		Potential source	of	Potential source topsoil	e of
	unit   		•	Rating class and limiting features		   Rating class and   limiting features	•
135: Haxtun	   85     	Wind erosion	      0.00  0.88	    Good   		    Good   	
.36: Haxtun, dry	     85   	Wind erosion	      0.00  0.88	    Good   		    Good   	       
.37: Haxtun, dry	     55     	Wind erosion	      0.00  0.88	  Good   	       	  Good   	       
Olney	   30     	Wind erosion	    0.00  0.88	  Good   	       	  Good   	       
.38: Haxtun	     55     	Wind erosion	      0.00  0.88	  Good   	       	  Good   	       
Olnest	30 30	Wind erosion	    0.00  0.88	  Good   	       	  Good   	       
.39: Keith	     85     	Low content of organic matter	      0.12    0.68	    Good   	       	    Good   	       
40: Keith	     85     	Low content of organic matter	      0.12    0.68	ĺ		  Good   	         
41: Kim	i I	:	0.88	  Good     		   Good     	
42: Kim	   90     	'	0.88 	    Good   		    Good   	       

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source	of	Potential source of topsoil		
	map  unit			 		 		
			Value	Rating class and	Value	Rating class and	Value	
	i	limiting features		limiting features		limiting features		
	l		İ	İ	İ	İ	i	
143:	i	İ	į	İ	İ	İ	i	
Kimst	90	Fair:		Good		Good		
		Low content of	0.12					
	ļ	organic matter			!		!	
		No water erosion	0.99				!	
144:	 	l I	1	 	l I	 	1	
Kimst	I I 90	  Fair:	1	  Good	l I	  Good	1	
		Low content of	0.12		i		i	
	i	organic matter			i		i	
	i	No water erosion	0.99	İ	İ	İ	i	
	ĺ		İ	ĺ	ĺ	ĺ	İ	
145:				[			1	
Las Animas,								
occasionally			!				!	
flooded	85	:	:	Fair:	:	Fair:		
	 	Low content of organic matter	0.12	Depth to saturated zone	0.53	Depth to saturated zone	0.53	
	l I	Organic matter		Saturated Zone	l I	saturated zone	1	
146:	l I	 	<u> </u>	! 	i	! 	i	
Limon, rarely	i	! 	i		i		i	
flooded	85	Poor:	i	Poor:	i	Poor:	i	
	ĺ	Too alkaline	0.00	Low strength	0.00	Too clayey	0.00	
		Too clayey	0.00	Shrink-swell	0.12	Salinity	0.88	
		Low content of	0.12			Sodium content	0.98	
	ļ	organic matter						
		Sodium content	0.97	 		 		
147:	l I	l I		l I	 	l I	1	
Limon, moist, rarely	l I	 		! 		! 	1	
flooded		Poor:	i	Poor:	i	Poor:	i	
	i	Too alkaline	0.00	Low strength	0.00	Too clayey	0.00	
	ĺ	Too clayey	0.00	Shrink-swell	0.12	Salinity	0.88	
		Low content of	0.12	[		Sodium content	0.98	
		organic matter						
	ļ	Sodium content	0.97		ļ		!	
1.40			!				!	
148: Manzanola	   0E	  Paire		  Fair:	l I	  Fair:	1	
MaiizaiiOIa	   65	'	0.12	•	0.22	:	0.36	
	i	organic matter			0.87		1	
	i	Too clayey	0.50	:	i	İ	i	
	İ	No water erosion			į	İ	į	
				[				
149:								
Manzanst, rarely		 					1	
flooded	ا 90 ا			Poor:   Low strength		Fair:   Too clayey	10.00	
	l I	Too clayey  Low content of		,		Sodium content	0.09	
	i	organic matter	:					
	i		0.90	İ	i	İ	i	
	İ	İ	İ	İ	İ	İ	i	
150:				I			İ	
Manzanst	85	Fair:		Poor:		Fair:		
		Too clayey			•	Too clayey	0.09	
		Low content of	0.88	Shrink-swell	0.87	Sodium content	0.90	
				i .				
	ļ	organic matter Sodium content	  0.90					

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map unit	reclamation material		Potential source roadfill	of	Potential source of   topsoil 		
	   		:	Rating class and limiting features		Rating class and limiting features	Value	
151: Midway	     85     	  Poor:   Droughty   Depth to bedrock   Low content of	0.00	Low strength		Too clayey	    0.00  0.29  0.60	
	     	organic matter   Too clayey   Sodium content 	  0.50  0.60 		     	Salinity     	0.88     	
152: Midway, moist	   85       	!	0.00	Low strength Shrink-swell	:	Too clayey	  0.00  0.29  0.60  0.88	
153:	     	Sodium content   	0.60   	•	     	     	     	
Midway	55             	Poor:   Droughty   Depth to bedrock   Low content of   organic matter   Too clayey   Sodium content	0.00	Low strength Shrink-swell	:	Too clayey	  0.00  0.29  0.60  0.84  0.88	
Razor	30             	Poor:   Too clayey   Depth to bedrock   Droughty   Low content of   organic matter   Sodium content	0.00	Depth to bedrock Shrink-swell	0.00	Depth to bedrock	  0.00  0.58  0.84  0.88  0.98	
154: Midway, moist	   55           	Droughty Depth to bedrock Low content of organic matter	0.00	Low strength Shrink-swell		Too clayey	  0.00  0.29  0.60  0.84  0.88	
Razor, moist	   30           	Too clayey Depth to bedrock Droughty Low content of organic matter	0.00	Depth to bedrock   Shrink-swell 	0.00	Depth to bedrock	  0.00  0.58  0.84  0.88  0.98	
155: Midway	   55           	Droughty Depth to bedrock Low content of organic matter Too clayey	0.00	Depth to bedrock   Slope   Shrink-swell	0.00	Slope   Too clayey	  0.00  0.00  0.29  0.60  0.88	

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map unit	reclamation mater		Potential source roadfill	of	Potential source topsoil	of
	   			Rating class and		•	•
155:				    Vot maked	 	    Vot maked	
Rock outcrop	30	NOC Faced 	 	Not rated 	 	Not rated 	
156:		   December		l no one		l Parana	
Midway, moist	55           	Droughty Depth to bedrock Low content of organic matter	0.00  0.00  0.12 	Depth to bedrock   Slope   Shrink-swell	0.00  0.00  0.08	Too clayey Sodium content	  0.00  0.00  0.29  0.60  0.88
Rock outcrop, moist-	30 	  Not rated 	   	  Not rated 	   	  Not rated 	   
157: Nunn	   85   	'	      0.12	  Good   	     	  Good   	     
158: Nunn	   55     		      0.12   	  -  Good  -  -	         	  -  Good  -  -	       
Sampson, rarely flooded	   30 	  Good 	   	  Good 	;     	    Good 	   
159: Nunn, dry	   50   	:	    0.12 	  Good   	     	  Good   	     
Sampson, dry, rarely flooded		    Good 	     	    Good 	     	    Good 	     
160: Olnest	   85     	Wind erosion	    0.00  0.88 	:	         	  Good   	;         
161: Olnest	   85   		      0.88 	 	         	 	       
162: Olnest	   85   		      0.88 	  Good 	;         	  Good 	     
163: Olnest	   90     		      0.88 	  -  Good  -  -	         	  -  Fair:   Slope  -	      0.96 
164: Olney	   85     	Wind erosion	    0.00  0.88 	  Good   	 	  Good   	         

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater 		Potential source	of	Potential source	of
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	Value
165: Olney	     85   		      0.12	    Good   	       	    Good   	       
166: Olney	     85   		      0.12	    Good 	       	    Good 	       
167: Olney	     90   	•	      0.12	    Good 	       	  Fair:   Slope 	      0.96
168: Olney	     55   		      0.12	    Good   	       	    Good   	     
Midway	   30           	Droughty Depth to bedrock Low content of organic matter Too clayey	0.00	Shrink-swell   		Too clayey	  0.00  0.29  0.60  0.88
169: Otero	     85     	Low content of organic matter	      0.12    0.94	į	         	  Fair:   Too sandy   	      0.94   
170: Oterodry	     85   	•	      0.50	    Good 	       	    Good 	       
171: Oterodry	     85   	  Fair:   Low content of   organic matter	:	    Good   	       	    Good   	     
172: Platner	     85   	    Good   	       		      0.00  0.99	•	       
173: Platner	     50 	    Good   	       	!	      0.00  0.98	    Good   	       
Ascalon	   35     	   Fair:   Low content of   organic matter   No water erosion	0.12	į	       	  Good   	       

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source roadfill	of	Potential source topsoil	of
	unit   	Rating class and		Rating class and limiting features			•
174: Pleasant, rarely ponded	     90         	'	        0.00     	 	      0.00  0.00    0.39	Depth to saturated zone	        0.00  0.00 
175: Rago, rarely flooded	     90   		0.50		    0.00  0.97	1 7 7	    0.44 
176: Rago, dry, rarely flooded	     90 		0.50		      0.00  0.97		      0.44
177: Razor	   85           	Too clayey Sodium content Droughty Depth to bedrock	0.00  0.00  0.57	Depth to bedrock   Shrink-swell	0.00	Depth to bedrock	    0.00  0.58  0.88  0.98
178: Razor, moist	   85         	Too clayey Sodium content Droughty Depth to bedrock	0.00  0.00  0.57	Depth to bedrock   Shrink-swell	0.00	Depth to bedrock	    0.00  0.58  0.88  0.98
179: Sampson, rarely flooded	       90	      Good	       	      Good 	       	      Good 	
180: Sampson, dry, rarely flooded		      Good	       	      Good 	       	      Good 	     
181: Satanta	   90       	Low content of organic matter	    0.12    0.90	      Good       	         	      Good       	       
182: Satanta, dry	   90       	:	    0.12    0.90	  Good     	         	  Good     	;         

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map unit	reclamation mater		Potential source roadfill	of	Potential source topsoil	of
	   	Rating class and	•	Rating class and limiting features	•		•
183: Seldom, rarely flooded	     85   	Too alkaline	        0.00  0.88		0.00	  -  Poor:   Depth to   saturated zone	        0.00
184: Shingle	   55         	Droughty Depth to bedrock Low content of organic matter	0.00  0.00  0.12	 			    0.00     
Midway	   30             	Droughty Depth to bedrock Low content of organic matter Too clayey	0.00	Low strength Shrink-swell	•	Too clayey	  0.00  0.29  0.60  0.88 
185: Shingle, moist	   55         	Droughty Depth to bedrock Low content of organic matter	0.00  0.00  0.12	Low strength		  Poor:   Depth to bedrock     	    0.00       
Midway, moist	   30           	Droughty Depth to bedrock Low content of organic matter Too clayey	0.00	Low strength Shrink-swell		Too clayey	  0.00  0.29  0.60  0.88 
186: Sundance	   85       	Low content of organic matter	0.00  0.12	Shrink-swell	    0.00  0.94 	  Good       	         
187: Table Mountain, rarely flooded	     85     	  -  Fair:   Low content of   organic matter   No water erosion	0.50	İ	         	    Good     	         
188: Travessilla	   60       	Droughty	0.00  0.00  0.12	Depth to bedrock	0.00	•	    0.00  0.00
Rock outcrop	   25 	  Not rated 	   	  Not rated 	   	  Not rated 	   

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source roadfill	of	Potential source topsoil	e of
	unit   			   Rating class and   limiting features		   Rating class and   limiting features	•
189: Truckton	   85     	Low content of organic matter Droughty	    0.12    0.58  0.78	 	         	  Fair:   Too sandy 	      0.78   
190:	   	100 Sandy   		 	   	   	
Truckton	85       	Low content of organic matter Droughty	  0.12    0.58  0.78	 	         	Fair:   Too sandy     	  0.78     
191: Truckton, dry	   85       	Low content of organic matter Droughty	0.12	İ	         	  -  Fair:   Too sandy   	    0.78   
192:			 		İ	 	
Truckton, dry	85       	Low content of organic matter Droughty	  0.12    0.58  0.78	 	       	Fair:   Too sandy   	  0.78     
193: Valent	     25	    Poort	   	    Good	   	    Fair:	
vacue		Wind erosion Too sandy Low content of organic matter	0.00  0.06  0.12    0.35	  -  -  -	         	Too sandy Slope	0.06  0.37   
194: Valent		l Doom :	į	lgand	į		į
	       	Wind erosion   Too sandy   Low content of   organic matter	  0.00  0.06  0.12    0.35	 	         	Fair:   Too sandy       	  0.06       
Bijou	30       	Wind erosion   Low content of   organic matter	  0.00  0.88    0.97	 	         	Good       	       
195:							-
Valent	60         	Wind erosion   Too sandy	  0.00  0.06  0.12    0.35	 	         	Fair:   Slope   Too sandy   	  0.04  0.06   

Table 15b.--Construction Materials--Continued

	Pct. of map unit	reclamation mater		Potential source roadfill	of	Potential source topsoil	e of
	   			Rating class and   limiting features		Rating class and	Value
195:	 	l I		l I		<u> </u>	
Vona	30     	Wind erosion	0.00		     	Fair:   Too sandy   Slope	  0.94  0.96
		Too sandy	0.94				
196:	l I	 	 	 		 	l I
Valent	l 55	  Poor:	i	Good	i	  Fair:	i
	i	:	0.00	i	i i	Slope	0.04
	i	Too sandy	0.06	İ	i i	Too sandy	0.06
	i	·	0.12		i i	<u>-</u>	i
	i	organic matter	:	i	i i		i
	i	Droughty	0.35	İ	i i		i
Vonid	35	•		Good		Fair:	
		!	0.00	!		Slope	0.96
		Low content of	0.88				
	 	organic matter	!	 		[ ]	
197:		! [	i	 			<u> </u>
Vona	85	Poor:	i	Good	i i	  Fair:	i
	i	•	0.00	•	i i	Too sandy	0.94
	i	Low content of	0.12	i	i i	<u>-</u>	i
	i	organic matter	i	İ	i i		i
	İ	Too sandy	0.94	İ	į į	ĺ	į
			1				
198:			ļ		! !		!
Vona	85	!	:	Good	!	Fair:	10.04
		Low content of organic matter	0.12	l I		Too sandy	0.94
	i	Too sandy	0.94	! 	i	 	i
	i			İ	i i		i
199:	ĺ	ĺ	İ	ĺ	į į		Ī
Vona	85	Fair:		Good		Fair:	
		Low content of	0.12			Too sandy	0.94
		organic matter	!	!	[ [	Slope	0.96
		Too sandy	0.94			i .	
200:	 	 	!	l i		İ	1
Vona	   35	  Fair:	!	  Good		  Fair:	1
VOIIa	1 33	Low content of	0.12	!		Too sandy	0.94
	i	organic matter	1	! 	i		1
	i	Too sandy	0.94	İ	i i		i
			1				
Karval	30	•	•	Fair:		Poor:	
	!	Droughty	0.00		0.82		0.00
		Wind erosion	0.00	•	! !	Rock fragments	0.00
		Low content of organic matter	0.12				1
		Too acid	0.84	! 		 	
	i			į	<u> </u>		i
Midway, moist	20	Poor:		Poor:	l i	Poor:	
		Droughty	0.00	Low strength	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of	0.12		0.82		0.29
		organic matter		Shrink-swell	0.87	•	0.60
		Too clayey	0.50	•		Salinity	0.88
	I	Sodium content	0.60	I	I	İ	1

Table 15b.--Construction Materials--Continued

	Pct. of map	reclamation mater		Potential source roadfill	of	Potential source topsoil	of
	unit   			Rating class and   limiting features		   Rating class and   limiting features	Value
201: Vona	     55 	•	      0.12	    Good   	       	  Fair:   Too sandy 	      0.94
Midway, moist	     30   	i	0.00	Low strength		Too clayey	    0.00  0.29  0.60
	       	!	  0.50  0.60	 	     	Salinity     	0.88
202: Vona	   60     	  Fair:   Low content of   organic matter   Too sandy	    0.12    0.94	  Good     	       	  Fair:   Slope   Too sandy 	  0.04  0.94
Seldom	   20     	•	  0.00  0.88 		    0.00   	Poor:   Depth to   saturated zone   Slope	  0.00    0.04
203: Vonid	   85     	!	    0.00  0.88	  Good     	         	  Good     	       
204: Vonid	   85     	!	      0.88   	 	       	    Good   	       
205: Vonid	   85   	!	    0.88 	  Good   	 	  Fair:   Slope   	    0.96 
206: Vonid	   35   	  Fair:   Low content of   organic matter	    0.88 	  Good   	         	  Good   	
Karval	30         	Poor:   Droughty   Wind erosion   Low content of   organic matter   Too acid	  0.00  0.00  0.12    0.84	 	  0.82       	Poor:   Slope   Rock fragments   	  0.00  0.00   
Midway	20   20	Poor:   Droughty   Depth to bedrock   Low content of   organic matter   Too clayey   Sodium content	0.00	Depth to bedrock   Slope   Shrink-swell	0.00	Slope   Too clayey	  0.00  0.00  0.29  0.60  0.88

Table 15b.--Construction Materials--Continued

and soil name	Pct. of map	reclamation mater		Potential source	of	Potential source	of
	unit   	Rating class and		   Rating class and   limiting features			Value
207: Vonid	     55 	•	      0.88	    Good 	     	    Good 	       
Midway	   30           	Poor:   Droughty   Depth to bedrock   Low content of   organic matter   Too clayey	0.00	Low strength Shrink-swell		Too clayey	  0.00  0.29  0.60  0.88
208: Vonid	   65 	'	      0.88	    Good 	       	  Fair:   Slope 	    0.04
Seldom	   20       	Too alkaline	    0.00  0.88 		    0.00   	  Poor:   Depth to   saturated zone   Slope	  0.00    0.04
209: Wages	   85   	•	    0.88	  Good 	       	  Good 	       
210: Wages	   85     	Low content of organic matter	    0.88    0.90	  Good   	       	  Fair:   Slope 	    0.96   
211: Wages, dry	   85     	Low content of organic matter	    0.88    0.90	    Good   	       	  Good 	
212: Wages	     60   	Low content of organic matter	0.88	İ	       	  Fair:   Slope 	    0.63
Karval	İ	Droughty Wind erosion Low content of organic matter	0.00  0.00  0.12	  - 	           	  Poor:   Rock fragments   Slope   	  0.00  0.63   
213: Weld	   85 	  -  Fair:   No water erosion 		    Poor:   Low strength 	      0.00	    Good   	       
214: Weld, dry	   85 	  Fair:   No water erosion		  Poor:   Low strength	    0.00	  Good 	   

Table 15b.--Construction Materials--Continued

	l	I				l	
Map symbol	Pct.	Potential source	of	Potential source	of	Potential source	e of
and soil name	of	reclamation mater	ial	roadfill		topsoil	
	map						
	unit						
		Rating class and	Value	Rating class and	Value	Rating class and	Valu
	L	limiting features		limiting features		limiting features	
215:	 	 	 	 		 	
Wiley	85	  Fair:	i	Good	i	Good	i
_	i	Low content of	0.12	İ	i	İ	i
	i	organic matter	i	İ	i	İ	i
	į	Water erosion	0.68	į	İ	İ	i
216:							
Wiley	Ι Ι <u>8</u> 5	  Fair:	!	  Good	1	  Good	-
Wiley	1 03	Low content of	•	1		1	1
	l I	organic matter	1	 		 	1
	! 	,	0.68	 	i	! 	i
	i	İ	i	İ	i	İ	i
217:	İ	İ	i	İ	i	İ	i
Wilid	85	Fair:	İ	Good	İ	Good	İ
	ĺ	Low content of	0.12		İ	İ	İ
	ĺ	organic matter	İ		İ	İ	İ
	ĺ	Water erosion	0.68	İ	1	ĺ	İ
218:		 					
Water	I I 90	  Not rated	i	  Not rated	i	  Not rated	i .
			i		<u> </u>		i
	ļ	<u> </u>	ļ	!	!	!	ļ
219:		 	!		!	 	!
Gravel pits	100 	Not rated 	 	Not rated	1	Not rated 	
	i		i	İ	i		i
220:			1				1
Access denied	100	Not rated		Not rated		Not rated	

## Table 16.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

	L:	imitations for-	-	Features affecting					
Map symbol and soil name	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage	   Irrigation 	Terraces and   diversions	Grassed   waterways 		
101: Apishapa, rarely ponded	:	    Severe:   ponding.	    Severe:   no water. 	    Frost action,   percs slowly,   ponding.		      Percs slowly,   ponding. 	      Percs slowly,   wetness.		
102: Arvada	  Slight   	Severe:   excess   sodium.	  Severe:   no water. 	  Deep to water   	Excess sodium, percs slowly.		Excess sodium, percs slowly, too arid.		
103: Ascalon	    Severe:   seepage.	    Severe:   piping.	    Severe:   no water.	  Deep to water	    Soil blowing   	    Erodes easily,   soil blowing.			
104: Ascalon	    Severe:   seepage. 	    Severe:   piping.	  Severe:   no water.	  Deep to water	    Slope, soil   blowing. 	    Erodes easily,   soil blowing.	•		
105: Ascalon	    Severe:   seepage. 	    Severe:   piping. 	  Severe:   no water.	  Deep to water	    Slope, soil   blowing. 	    Erodes easily,   soil blowing.			
106: Ascalon, dry	    Severe:   seepage.	  Severe:   piping.	  Severe:   no water.	  Deep to water	    Soil blowing   	    Erodes easily,   soil blowing.	•		
107: Ascalon, dry	    Severe:   seepage.	    Severe:   piping.	  Severe:   no water.	  Deep to water	    Slope, soil   blowing.	    Erodes easily,   soil blowing.			
108: Ascalon, dry	    Severe:   seepage.	    Severe:   piping.	  Severe:   no water.	  Deep to water	    Slope, soil   blowing.	    Erodes easily,   soil blowing.			
109: Ascalon	    Severe:   seepage.	    Severe:   piping.	  Severe:   no water.	  Deep to water	    Soil blowing   	    Erodes easily,   soil blowing.	-		
Haxtun	  Severe:   seepage. 	  Moderate:   piping,   thin layer.	Severe:   no water. 	Deep to water	  Fast intake,   soil blowing. 	  Soil blowing   	  Favorable.   		
110: Ascalon, dry	    Severe:   seepage.	    Severe:   piping.	  Severe:   no water.	  Deep to water	    Soil blowing   	    Erodes easily,   soil blowing.			
Haxtun, dry	  Severe:   seepage. 	  Moderate:   piping,   thin layer.	  Severe:   no water. 	Deep to water	  Fast intake,   soil blowing. 		  Favorable.   		
111: Bacid	    Moderate:   seepage. 	    Moderate:   piping. 	    Severe:   no water.	  Deep to water 	    Erodes easily,   percs slowly.		    Erodes easily,   too arid. 		
Bankard, occasionally flooded	    Severe:   seepage. 	  Severe:   seepage,   piping.	      Severe:   no water. 	    Deep to water   	:	    Too sandy,   soil blowing. 	      Too arid,   droughty. 		

Table 16.--Water Management--Continued

_	:	imitations for-		Features affecting					
Map symbol and soil name	Pond reservoir   areas 	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and   diversions 	Grassed waterways		
112: Glenberg, occasionally	     	     	 	     	 	    -  -	    -  -		
flooded	Severe:   seepage. 	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water	Flooding,   soil blowing,   droughty.		  Too arid,   droughty. 		
113: Bijou	    Severe:   seepage. 	    Severe:   thin layer. 	    Severe:   no water. 	    Deep to water   	    Fast intake,   droughty. 	    Soil blowing   	    Too arid,   droughty. 		
114: Bijou, moist	  Severe:   seepage.	  Severe:   thin layer.	  Severe:   no water.	  Deep to water 	  Fast intake,   droughty. 	  Soil blowing   	  Too arid,   droughty. 		
115: Bijou, moist	  Severe:   seepage. 	  Severe:   thin layer. 	  Severe:   no water. 	  Deep to water   	  Fast intake,   slope,   droughty.	  Soil blowing     	Too arid, droughty.		
116: Blakeland	  Severe:   seepage. 	  Severe:   seepage,   piping.	  Severe:   no water. 	  Deep to water   	  Fast intake,   slope,   droughty.	Too sandy, soil blowing.	  Too arid,   droughty. 		
117: Bresser	    Severe:   seepage. 	  Severe:   seepage,   piping.	  Severe:   no water. 	  Deep to water   	  Slope, soil  blowing,  droughty.	Too sandy, soil blowing.	    Too arid,   droughty. 		
118: Campo	  Moderate:   seepage. 	  Severe:   piping. 	  Severe:   no water.	  Deep to water   	  Erodes easily,   percs slowly.	    Erodes easily   	Erodes easily percs slowly too arid.		
119: Canyon	    Severe:   slope, depth   to rock.	    Severe:   thin layer. 	    Severe:   no water. 	    Deep to water   	    Slope, depth   to rock. 	    Slope, depth   to rock. 	    Slope,   too arid. 		
Rock outcrop	  Severe:   slope, depth   to rock.	  Slight   	  Severe:   no water. 	  Deep to water   	  Slope, depth   to rock. 	  Slope, depth   to rock. 	  Slope, depth   to rock. 		
120: Colby	    Moderate:   seepage. 	    Severe:   piping. 	  Severe:   no water. 	    Deep to water   	    Erodes easily   	    Erodes easily   	    Erodes easily,   too arid. 		
121: Colby	  Moderate:   seepage,   slope.	  Severe:   piping. 	  Severe:   no water. 	  Deep to water   	  Erodes easily,   slope.	  Erodes easily   	Erodes easily,		
122: Colby	  Moderate:   seepage,   slope.	    Severe:   piping. 	    Severe:   no water.	    Deep to water   	    Erodes easily,   slope. 	    Erodes easily   	    Erodes easily.   too arid. 		
Weld	  Severe:   seepage.	  Severe:   piping. 	  Severe:   no water.	  Deep to water   	  Erodes easily,   percs slowly.	  Erodes easily,   percs slowly.	•		
123: Firstview.	   	     	     	     	 	 	   		

Table 16.--Water Management--Continued

	ļ	Limitations for-		Features affecting					
	:	ir Embankments,	Aquifer-fed	 	Tomais-ti	Terraces and	Grassed		
soil name	areas	dikes, and	excavated ponds	Drainage	Irrigation	diversions	waterways		
	I	l	l	<u> </u>	I	I	I		
124:	İ	i	i		İ	<u> </u>	i I		
Fort Collins	Severe:	Severe:	Severe:	Deep to water	Favorable	Erodes easily	Erodes easily		
	seepage.	piping.	no water.				too arid.		
	ļ	Ţ		!	]	[			
125:					1				
Fort Collins	Severe:   seepage.	Severe:	Severe:	Deep to water	Slope	Erodes easily	Erodes easily,   too arid.		
	seepage.	piping.	no water.	I I	I I	 	too arid.		
126:	İ	i	İ	<u> </u>	İ	İ	i I		
Fort Collins	Severe:	Severe:	Severe:	Deep to water	Slope	Erodes easily	Erodes easily		
	seepage.	piping.	no water.			[	too arid.		
			1		]				
Karval	:	Severe:	Severe:	Deep to water	: -		Slope,		
	seepage,   slope.	seepage.	no water.	I I	droughty.	too sandy.	too arid, droughty.		
	slope.	i		I I	 	! 	droughty:		
127:	i	i	i	i	i	i	İ		
Fort Collins	Severe:	Severe:	Severe:	Deep to water	Slope	Erodes easily	Erodes easily		
	seepage.	piping.	no water.			[	too arid.		
	!	ļ	!		!	!	<u> </u>		
Platner	:	Moderate:	Severe:	Deep to water	Percs slowly,	Percs slowly	Percs slowly,		
	seepage,   slope.	piping,   thin layer.	no water.	I I	slope.	l I	too arid.		
	slope.	chin layer.	i		l I	i i	! 		
128:	İ	i	i	i	i	İ	i I		
Fort Collins	Severe:	Severe:	Severe:	Deep to water	Slope	Erodes easily	Erodes easily		
	seepage.	piping.	no water.			[	too arid.		
	!	ļ	!		!	!	<u> </u>		
Razor, moist	:	Severe:	Severe:	Deep to water	Percs slowly,				
	slope.	thin layer.	no water.	I I	to rock.	slope, depth to rock.	arid, depth		
	! !	İ	i		00 100%	00 100x.	00 100%		
129:	İ	i	i	İ	İ	İ	İ		
Fort	Moderate:	Moderate:	Severe:	Deep to water	Excess salt,	Erodes easily,	Erodes easily		
	seepage.	piping.	no water.		percs slowly.	percs slowly.	too arid.		
		ļ							
130: Fort	  Madamaka	  Moderate:	  Severe:	  Boom to restor	  Engage colt	  Emades essiles	  Boodes cosile		
FOI C	Moderate:   seepage,	piping.	no water.	Deep to water	:	Errodes easily, percs slowly.			
	slope.			i	slope.				
	İ	į	İ	j	j	İ	İ		
131:	l	I							
Fort	:	Moderate:	Severe:	Deep to water	•	Erodes easily,			
	seepage,   slope.	piping.	no water.	I I	percs slowly,	percs slowly.	too arid.		
	slope.	i		I I	slope.	! 	I 		
Karval	Severe:	Severe:	Severe:	Deep to water	Slope,	Slope,	  Slope,		
	seepage,	seepage.	no water.	j	droughty.	too sandy.	too arid,		
	slope.	1				[	droughty.		
	<u> </u>	ļ							
132:	Madameter	  Madamataa	 	  Peep #=#	 	  Prodes	   Beerlag		
Fort	Moderate:   seepage,	Moderate:   piping.	Severe:   no water.	Deep to water	:	Errodes easily, percs slowly.			
	seepage,		110 #4661.		slope.	POTOD BIOWIY.			
		i	i	i		į	i		
Razor	Severe:	Severe:	Severe:	Deep to water	Percs slowly,	Percs slowly,	Slope, too		
	slope.	thin layer.	no water.	1		slope, depth			
	!	ļ.	!	!	to rock.	to rock.	to rock.		
122.		[				[			
133:	I I	I I	I I	I	I I	I I	I I		
Haversid, rarely flooded	•	  Severe:	  Severe:	Deep to water	  Erodes easily,	  Erodes easily	  Erodes easily		
	seepage.	piping.	no water.		excess salt.		too arid.		
		,		•					

Table 16.--Water Management--Continued

	I	Limitations for-	-	Features affecting							
Map symbol and	Pond reservo	ir Embankments,	Aquifer-fed	l	I	Terraces and	Grassed				
soil name	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways				
DOLL HAMO	42545	levees	ponds								
			1			İ	i				
134:	i	i	i	i	i	İ	i				
Haverson, rarely	i	i	i	i	i	İ	i				
flooded	:	Severe:	Severe:	Deep to water	Erodes easily,	Erodes easily	Erodes easily,				
	seepage.	piping.	no water.	1	excess salt.	i	too arid.				
				i		İ	i				
135:	İ	i	i	i	İ	i	i				
Haxtun	Severe:	Moderate:	Severe:	Deep to water	Fast intake,	Soil blowing	Favorable.				
	seepage.	piping,	no water.	į	soil blowing.	İ	İ				
	İ	thin layer.	İ	i	į	İ	İ				
	ĺ	İ	İ	İ		İ	Ì				
136:							1				
Haxtun, dry	Severe:	Moderate:	Severe:	Deep to water	Fast intake,	Soil blowing	Favorable.				
	seepage.	piping,	no water.		soil blowing.		1				
		thin layer.					[				
137:							1				
Haxtun, dry	Severe:	Moderate:	Severe:	Deep to water	Fast intake,	Soil blowing	Favorable.				
	seepage.	piping,	no water.		soil blowing.						
		thin layer.					1				
							1				
Olney	Severe:	Severe:	Severe:	Deep to water	Fast intake,	Too sandy,	Too arid,				
	seepage.	seepage,	no water.		droughty.	soil blowing.	droughty.				
		piping.									
		ļ									
138:		ļ	!				!				
Haxtun	:	Moderate:	Severe:	Deep to water	1	Soil blowing	Favorable.				
	seepage.	piping,	no water.		soil blowing.						
		thin layer.									
	1-			 							
Olnest	:	Severe:	Severe:	Deep to water	:	Soil blowing	Too arid,				
	seepage.	piping.	no water.		droughty.		droughty.				
120.	I I	I					1				
139:	l g			 		 	 				
Keith	:	Severe:	Severe:	Deep to water	Favorable	Erodes easily	_				
	seepage.	piping.	no water.	I I	 	l I	too arid.				
140:	I I			I I	I I	l I	 				
Keith	Carrers	  Severe:	  Severe:	Deen to water	  Slope	  Frodes easily	  Frodes easily				
Keich	seepage.	piping.	no water.	Deep to water	I	Elodes easily	too arid.				
	seepage.	piping.	no water.	1	I I	! !	000 alia.				
141:	i i				i i		i I				
Kim	Severe:	Severe:	Severe:	Deep to water	Favorable	  Erodes easily	  Erodes easilv.				
	seepage.	piping.	no water.				too arid.				
				i	i	İ	1				
142:	i	i	i	i	i	i	i				
Kim	Severe:	Severe:	Severe:	Deep to water	Slope	Erodes easily	Erodes easily,				
	seepage.	piping.	no water.	i -	i -	i	too arid.				
	İ	i	i	i	İ	İ	İ				
143:	İ	İ	i	į	į	İ	İ				
Kimst	Moderate:	Severe:	Severe:	Deep to water	Erodes easily	Erodes easily	Erodes easily,				
	seepage.	piping.	no water.	i	į	İ	too arid.				
	1	1	1			I	I				
144:	1	1	1			l	I				
Kimst	Moderate:	Severe:	Severe:	Deep to water	Erodes easily,	Erodes easily	Erodes easily,				
	seepage,	piping.	no water.		slope.		too arid.				
	slope.	1	1				I				
	1	1	1				I				
145:	1	1	1				I				
Las Animas,	1	1	1			[	1				
occasionally	1	1	1				I				
flooded	Severe:	Severe:	Severe:	Flooding,	Wetness,	Too sandy,	Wetness,				
	seepage.	seepage,	cutbanks	frost action.	droughty.	wetness.	droughty.				
	1	piping,	cave.				I				
	1	wetness.	1				I				
			1				I				

Table 16.--Water Management--Continued

		imitations for-		Features affecting						
Map symbol and soil name	Pond reservoir   areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	   Drainage 	   Irrigation 	Terraces and   diversions 	Grassed   waterways 			
146: Limon, rarely flooded	    slight  	      Severe:   hard to pack. 	    Severe:   no water.	      Deep to water   	      Percs slowly,   slow intake.	      Percs slowly   	    Excess salt,   percs slowly   too arid.			
147: Limon, moist, rarely flooded-	    slight    	    Severe:   hard to pack.	    Severe:   no water.	    Deep to water 	    Percs slowly,   slow intake.	      Percs slowly   	Excess salt, percs slowly too arid.			
148: Manzanola	    Moderate:   slope. 	    Severe:   piping. 	    Severe:   no water. 	    Deep to water   	    Percs slowly,   slope.	    Erodes easily,   percs slowly. 				
149: Manzanst, rarely flooded		      slight	    Severe:   no water.	    Deep to water	    Percs slowly 	      Percs slowly 	    Percs slowly,   too arid.			
150: Manzanst	    Moderate:   slope.	    Slight   	    Severe:   no water.	    Deep to water 	    Percs slowly,   slope.	    Percs slowly   	    Percs slowly,   too arid.			
151: Midway	  Severe:   depth to   rock.	    Severe:   thin layer. 	  Severe:   no water.	  Deep to water   	  Percs slowly,   slope, depth   to rock.	Percs slowly, depth to rock.	Too arid, depth to			
152: Midway, moist	  Severe:   depth to   rock.	    Severe:   thin layer. 	  Severe:   no water. 	  Deep to water   	Percs slowly, slope, depth to rock.	Percs slowly, depth to rock.	Too arid, depth to rock.			
153: Midway	  Severe:   slope, depth   to rock.	    Severe:   thin layer. 	    Severe:   no water. 	    Deep to water   	Percs slowly, slope, depth to rock.		  Slope, too   arid, depth   to rock.			
Razor	  Severe:   slope. 	  Severe:   thin layer. 	  Severe:   no water. 	  Deep to water   	Percs slowly, slope, depth to rock.	_	  Slope, too   arid, depth   to rock.			
154: Midway, moist	  Severe:   slope, depth   to rock.		    Severe:   no water. 	    Deep to water   		Percs slowly, slope, depth to rock.				
Razor, moist	  Severe:   slope. 	  Severe:   thin layer. 	  Severe:   no water. 	  Deep to water   	slope, depth	Percs slowly, slope, depth to rock.	:			
155: Midway	  Severe:   slope, depth   to rock.	    Severe:   thin layer.   	    Severe:   no water. 	  Deep to water   		  Percs slowly,   slope, depth   to rock.				
Rock outcrop		  Severe:   area reclaim. 	  Severe:   no water. 	  Deep to water   	Slope, depth   to rock.	  Slope, depth   to rock. 	  Slope, depth   to rock. 			

Table 16.--Water Management--Continued

		imitations for-		1	Features a		
Map symbol and soil name	Pond reservoir   areas 	Embankments, dikes, and levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions 	Grassed waterways
	l	l	I	I	I	l	l
156: Midway, moist	  Severe:   slope, depth   to rock.	  Severe:   thin layer. 	  Severe:   no water. 	  Deep to water   	Percs slowly, slope, depth to rock.	Percs slowly, slope, depth to rock.	
Rock outcrop,	 	 	 	1		 	 
moist	Severe:   slope, depth   to rock.	Severe:   area reclaim. 	Severe:   no water. 	Deep to water	Slope, depth   to rock.	Slope, depth   to rock. 	Slope, depth   to rock.
157:	! 	<u> </u>	İ	i	i	! 	 
Nunn	Severe:   seepage.	Moderate:   piping. 	Severe:   no water. 	Deep to water	Percs slowly, slope.	Favorable   	Percs slowly, too arid.
158:	<u> </u>	!	!	!	!	!	<u> </u>
Nunn	Severe:   seepage. 	Moderate:   piping. 	Severe:   no water. 	Deep to water	Percs slowly   	Favorable   	Percs slowly,   too arid. 
Sampson, rarely flooded	  Severe:	  Severe:	  Severe:	Deep to water	    Favorable	    Favorable	  Favorable.
	seepage.	piping.	no water.		1		 
159:	! 	 	 		İ	! 	! 
Nunn, dry	Severe:   seepage.	Moderate:   piping. 	Severe:   no water.	Deep to water	Percs slowly   	Fevorable   	Percs slowly, too arid.
Sampson, dry,	İ	İ	İ	i	i	İ	İ
rarely flooded-	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water	Favorable   	Favorable   	Favorable.   
160:	İ	İ	İ	İ	İ	İ	İ
Olnest	Severe:   seepage. 	Severe:   piping.   	Severe:   no water. 	Deep to water	Slope,   soil blowing,   droughty.	Soil blowing     	Too arid,   droughty.   
161:	İ	İ	İ	İ	İ	İ	İ
Olnest	Severe:   seepage. 	Severe:   piping. 	Severe:   no water.	Deep to water	Soil blowing   	Soil blowing   	Too arid.   
162:	İ	İ	İ	i	i	İ	İ
Olnest	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water	Slope,   soil blowing.	Soil blowing   	Too arid.   
163:	İ	İ	İ	i	i	İ	İ
Olnest	Severe:   seepage,   slope.	Severe:   piping. 	Severe:   no water. 	Deep to water	Slope,   soil blowing. 	•	Slope,   too arid. 
164:	İ	İ	İ	İ	İ	İ	İ
Olney	Severe:   seepage. 	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water	Fast intake,   slope,   droughty.	Too sandy,   soil blowing.   	Too arid,   droughty.   
165:	İ	i	i	i	i	İ	İ
Olney	Severe:   seepage. 	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water	Droughty   	Too sandy,   soil blowing. 	Too arid,   droughty. 
166:	İ	i	i	i	i	İ	
Olney	Severe:   seepage.	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water	Slope,   droughty. 	Too sandy, soil blowing.	Too arid, droughty.

Table 16.--Water Management--Continued

		imitations for-		Features affecting						
Map symbol and soil name	Pond reservoir   areas	dikes, and	Aquifer-fed excavated	   Drainage	   Irrigation	Terraces and diversions	Grassed waterways			
		levees	ponds	1						
167:	 	 				 	 			
Olney	Severe:	Severe:	Severe:	Deep to water	Slope,	Slope,	Slope,			
	seepage,	seepage,	no water.	1	droughty.	too sandy,	too arid,			
	slope.	piping.				soil blowing.	droughty.			
168:	! [	! [	İ			! [	! [			
Olney	Severe:	Severe:	Severe:	Deep to water	Slope,	Too sandy,	Too arid,			
	seepage.	seepage,	no water.	!	droughty.	soil blowing.	droughty.			
	l I	piping. 	1	l I	l I	 	 			
Midway	Severe:	  Severe:	Severe:	Deep to water	Percs slowly,	Percs slowly,	Too arid,			
	depth to	thin layer.	no water.	İ	slope, depth	depth to	depth to			
	rock.		1		to rock.	rock.	rock.			
169:	l I	l I	I I	1	1	l I	l I			
Otero	  Severe:	  Severe:	Severe:	Deep to water	Slope,	Soil blowing	Too arid,			
	seepage.	seepage,	no water.	j	droughty.	İ	droughty.			
	!	piping.	!	!		<u> </u>	<u> </u>			
170:	 	l I	1			 	 			
Oterodry	  Severe:	  Severe:	Severe:	Deep to water	Slope,	Soil blowing	Too arid.			
	seepage.	piping.	no water.	İ	soil blowing.	İ	İ			
			1							
171: Oterodry	  Severe•	  Severe:	  Severe:	Deep to water	  Slope	  Soil blowing	  Too arid.			
occioni	seepage.	piping.	no water.		soil blowing.					
	İ	İ	İ	İ	İ	İ	İ			
172:	   <b> </b>									
Platner	seepage.	Moderate:   piping,	Severe:   no water.	Deep to water	Percs slowly	Percs slowly	Percs slowly, too arid.			
		thin layer.	İ	İ	İ	İ	İ			
		!	İ	İ	ļ.					
173: Platner	Modorato	  Moderate:	  Severe:	Deep to water	  Boxes slowly	  Percs slowly	  Percs slowly,			
Flachel	seepage.	piping,	no water.			Fercs slowly	too arid.			
	İ	thin layer.	i	i	İ	İ	İ			
Ascalon	Severe:   seepage.	Severe:   piping.	Severe:   no water.	Deep to water	Soil blowing	Erodes easily,   soil blowing.	:			
	beepage:			i						
174:	ĺ	ĺ	İ	İ	İ	ĺ	ĺ			
Pleasant, rarely	•									
ponded	slight	severe:   ponding.	Severe:		Percs slowly,		wetness,			
	İ						too arid.			
	!	<u> </u>	!	İ	ļ.	!	!			
175: Rago, rarely	 	l I	1			 	 			
flooded	  Severe:	  Moderate:	Severe:	  Deep to water	Erodes easily,	  Erodes easily,	  Erodes easily,			
	seepage.	piping,	no water.	i -	:	percs slowly.				
	!	thin layer.	!	!		<u> </u>	<u> </u>			
176:	 	l I	1			 	 			
Rago, dry,	! [	! [	İ			! [	! [			
rarely flooded-	Severe:	Moderate:	Severe:	Deep to water	Erodes easily,	Erodes easily,	Erodes easily,			
	seepage.	piping,	no water.		percs slowly.	percs slowly.	percs slowly.			
	 	thin layer. 	I I	I	I	 	I I			
177:	İ	 		İ			İ			
Razor	Moderate:	Severe:	Severe:	Deep to water	Percs slowly,	Percs slowly,	Too arid,			
	slope, depth	thin layer.	no water.	]	slope, depth	:	depth to			
	to rock.				to rock.	rock.	rock.			

Table 16.--Water Management--Continued

'	L	imitations for-	-	Features affecting							
Map symbol and soil name	Pond reservoir	Embankments,	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and diversions	Grassed waterways				
5011 1101110		levees	ponds								
				i	İ	l					
178:	į	İ	İ	į	İ	İ	İ				
Razor, moist	Moderate:	Severe:	Severe:	Deep to water	Percs slowly,	Percs slowly,	Too arid,				
ļ	slope, depth	thin layer.	no water.		slope, depth	depth to	depth to				
ļ	to rock.			1	to rock.	rock.	rock.				
	!	  -		!	!	<u> </u>	!				
179:											
Sampson, rarely	 	 	la								
flooded		Severe:	Severe:   no water.	Deep to water	Favorable	Favorable	ravorable.				
	seepage.	piping. 	no water.		1	l I	 				
180:	! 	 	i i	i i	i i	! 	! 				
Sampson, dry,	! 	! [	İ	i	İ	i İ	İ				
rarely flooded-	Severe:	  Severe:	Severe:	Deep to water	Favorable	Favorable	Favorable.				
_	seepage.	piping.	no water.	į -	į	İ	İ				
!											
181:				1							
Satanta	Severe:	Severe:	Severe:	Deep to water	Favorable	Erodes easily	Erodes easily				
ļ	seepage.	piping.	no water.	1			too arid.				
182:				<u> </u>							
Satanta, dry	:	Severe:	Severe:	Deep to water	Favorable	Erodes easily	Erodes easily   too arid.				
	seepage.	piping.	no water.	1	I I	l I	too aria.				
183:	 	 	I I	1	1	 	 				
Seldom, rarely	! 	! [	İ	i	İ	i İ	İ				
flooded	Severe:	  Severe:	Severe:	Favorable	Percs slowly,	Wetness,	Wetness.				
	seepage.	piping,	slow refill.	i	wetness,	soil blowing.	i				
	İ	wetness.	İ	İ	soil blowing.	į	İ				
ļ	ĺ	l	İ	İ	İ	ĺ	ĺ				
184:				1			[				
Shingle	Severe:	Severe:	Severe:	Deep to water	Slope, depth	Erodes easily,	Erodes easily				
ļ	depth to	piping.	no water.	1	to rock.	depth to	too arid.				
ļ	rock.					rock.					
16 de	 	 	 			 	  maa========				
Midway	depth to	Severe:   thin layer.	Severe:   no water.	Deep to water	slope, depth	Percs slowly, depth to	Too arid,   depth to				
	rock.	chin layer.	no water.		to rock.	rock.	rock.				
		! [	İ	i		1					
185:	İ	İ	İ	i	i	İ	i				
Shingle, moist	Severe:	Severe:	Severe:	Deep to water	Slope, depth	Erodes easily,	Erodes easily				
!	depth to	piping.	no water.		to rock.	depth to	too arid.				
ļ	rock.					rock.					
ļ				1							
Midway, moist	:	Severe:	Severe:	Deep to water	Percs slowly,	:	:				
	depth to	thin layer.	no water.		slope, depth	depth to	depth to				
	rock.	l I	I I	1	to rock.	rock.	rock.				
186:	 	 	I I	1	1	 	 				
Sundance	  Moderate:	  Severe:	Severe:	Deep to water	  Fast intake.	  Erodes easily,	  Erodes easilv				
	seepage.	piping.	no water.		:	soil blowing.					
	İ	İ	İ	İ	İ	İ	İ				
187:	I	l	1	1	I	l	I				
Table Mountain,	l	l		1	I	l	l				
rarely flooded-	Moderate:	Severe:	Severe:	Deep to water	Favorable	Erodes easily	Erodes easily				
!	seepage.	piping.	no water.	!	!	<u> </u>	!				
1		<u> </u>		!	Į.						
188:	  g	   <b> </b>		 		 	 				
Travessilla	!	Severe:	Severe:	Deep to water		Large stones,					
!	slope, depth	thin layer.	no water.	1	1	slope, depth					
1	to rock.	I	I	1	droughty.	to rock.	too arid.				
	i	I	1		1	1					
Rock outgron	    Severe:	  Sligh+	  Severe:	Deep to water	  Slope depth	  Slope.depth	  Slope.denth				
Rock outcrop	:	  Slight 	  Severe:   no water.	  Deep to water 	1	  Slope, depth   to rock.	  Slope, depth   to rock.				
Rock outcrop	  Severe:   slope, depth   to rock.	  Slight   	:	  Deep to water   	1	:					

Table 16.--Water Management--Continued

	:	imitations for		Features affecting						
Map symbol and soil name	Pond reservoir   areas	Embankments, dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and   diversions	Grassed waterway			
SOII Name	areas	levees	ponds	Drainage	Irrigation	diversions	waterway			
89:	 				[ [	 	 			
Fruckton	Severe:	Severe:	Severe:	Deep to water	Slope,	Too sandy,	Too arid,			
	seepage.	seepage,	no water.	i	soil blowing,	soil blowing.	droughty.			
	İ	piping.	į	į	droughty.	į	ĺ			
90:	 				l I	 	 			
Truckton	Severe:	Severe:	Severe:	Deep to water	Slope,	Too sandy,	Too arid,			
	seepage.	seepage,	no water.		soil blowing,	soil blowing.	droughty.			
	 	piping.			droughty.	 	 			
91:	 			<u> </u>	i	! 	 			
Truckton, dry	Severe:	Severe:	Severe:	Deep to water	Slope,	Too sandy,	Too arid,			
	seepage.	seepage,	no water.	!	soil blowing,	soil blowing.	droughty.			
	 	piping.	l	l I	droughty.	 	 			
92:	  -	-				  -	  -			
Truckton, dry	:	Severe:	Severe:	Deep to water			Too arid,			
	seepage.	seepage,   piping.	no water.	I	soil blowing,	soil blowing.	droughty.			
	 	piping.		I I	droughty.	 	 			
93:	  -	İ	į.	į.						
Valent	Severe:	Severe:	Severe:	Deep to water	:	Slope,	Slope,			
	seepage,	seepage,	no water,		slope,	too sandy,   soil blowing.	too arid,			
	slope. 	piping.		1	droughty.	soli blowing.	droughty.			
94:	İ	į	į	į	į.	į				
Valent		Severe:	Severe:	Deep to water	:	Too sandy,	Too arid,			
	seepage. 	seepage,   piping.	no water.		slope,   droughty.	soil blowing.	droughty.			
		İ	İ	<u> </u>	<u> </u>					
Bijou	Severe:   seepage.	Severe:   thin layer.	Severe:   no water.	Deep to water	slope,	Soil blowing	Too arid,   droughty.			
	seepage:	chin layer.	no water.	;	droughty.	! 	aroughey.			
95:	 		1		I I	 	  -			
Valent	  Severe:	Severe:	Severe:	Deep to water	  Fast intake,	  Slope,	  Slope,			
	seepage,	seepage,	no water.		slope,	too sandy,	too arid,			
	slope.	piping.	į	į	droughty.	soil blowing.	droughty.			
ona	  Severe:	  Severe:	  Severe:	Deep to water	  Fast intake,	  Slope,	  Slope,			
-	seepage,	seepage,	no water.		slope,	too sandy,	too arid,			
	slope.	piping.		[	droughty.	soil blowing.	droughty.			
96:	 				 	 	 			
/alent	Severe:	Severe:	Severe:	Deep to water	Fast intake,	Slope,	Slope,			
	seepage,	seepage,	no water.	Ţ	slope,	too sandy,	too arid,			
	slope. 	piping.	I I	I I	droughty.	soil blowing.	droughty.			
Jonid	  Severe:	Severe:	Severe:	Deep to water	Fast intake,	  Slope,	  Slope,			
	seepage,	seepage,	no water.	Ţ	slope,	too sandy,	too arid,			
	slope. 	piping.	1	I I	droughty.	soil blowing.	droughty.			
97:	' 		i	i	i	İ	İ			
Jona	Severe:	Severe:	Severe:	Deep to water	Fast intake,		Too arid,			
	seepage.	seepage,	no water.	I	slope,	soil blowing.	droughty.			
	 	piping.	1		droughty.	I 	 			
98:	İ	i	İ	İ	i	İ	İ			
/ona	Severe:	Severe:	Severe:	Deep to water	:	Too sandy,	Too arid,			
	seepage.	seepage,	no water.	!	droughty.	soil blowing.	droughty.			
	1	piping.	1	1	I .	i .	I .			

Table 16.--Water Management--Continued

		imitations for-		Features affecting							
Map symbol and soil name	Pond reservoir   areas 	Embankments,   dikes, and   levees	Aquifer-fed   excavated   ponds	   Drainage 	   Irrigation 	Terraces and   diversions 	Grassed waterways				
	ļ	ļ	ļ.	!	ļ.	<u> </u>					
199: Vona	  Severe:   seepage,   slope.	  Severe:   seepage,   piping.	  Severe:   no water. 	  Deep to water   	  Slope,   droughty. 	  Slope,   too sandy,   soil blowing.	  Slope,   too arid,   droughty.				
200:	 	 	! 	 	! 	 	 				
Vona	Severe:   seepage. 	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water	Slope,   droughty. 	Too sandy, soil blowing.	Too arid, droughty.				
Karval	  Severe:   seepage,   slope.	  Severe:   seepage. 	Severe:   no water. 	Deep to water	  Slope,   droughty. 	  Slope,   too sandy. 	  Slope,   too arid,   droughty.				
Midway, moist	  Severe:   slope, depth   to rock.	  Severe:   thin layer.   	  Severe:   no water. 	  Deep to water     	  Percs slowly,   slope, depth   to rock.	Percs slowly, slope, depth to rock.	  Slope, too   arid, depth   to rock.				
201:	 	 	İ		İ	 	 				
Vona	Severe:   seepage. 	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water   	Slope,   droughty. 	Too sandy,   soil blowing. 	Too arid,   droughty. 				
Midway, moist	  Severe:   depth to   rock.	  Severe:   thin layer.   	  Severe:   no water. 	  Deep to water     	Percs slowly, slope, depth to rock.	Percs slowly, depth to rock.	Too arid, depth to rock.				
202:	į	į	i	İ	i	İ	İ				
Vona	Severe:   seepage,   slope.	Severe:   seepage,   piping.	Severe:   no water. 	Deep to water	Slope,   droughty. 	Slope,   too sandy,   soil blowing.	Slope,   too arid,   droughty.				
Seldom	  Severe:   seepage,   slope. 	  Severe:   piping,   wetness. 	  Severe:   slow refill.   	  slope     	  Slope,   wetness,   soil blowing.	  Slope,   wetness,   soil blowing. 	  Slope,   wetness.   				
203:	İ	İ	İ	i	İ	İ	İ				
Vonid	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water	Slope,   soil blowing,   droughty.	Soil blowing   	Too arid,   droughty. 				
204:	İ	İ	i		İ	! 	' 				
Vonid	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water   	Slope,   soil blowing. 	Soil blowing   	Too arid.   				
205: Vonid	  Severe:   seepage,   slope.	  Severe:   piping. 	  Severe:   no water. 	  Deep to water   	-	  Slope,   soil blowing. 	  Slope,   too arid. 				
206:	 	 	! 	 	! 	 	 				
Vonid	  Severe:   seepage. 	  Severe:   piping. 	Severe:   no water.	Deep to water	Slope,   soil blowing.	  Soil blowing   	  Too arid.   				
Karval	  Severe:   seepage,   slope.	  Severe:   seepage. 	Severe:   no water. 	Deep to water	  Slope,   droughty. 	  Slope,   too sandy. 	  Slope,   too arid,   droughty.				
Midway	  Severe:   slope, depth   to rock.	  Severe:   thin layer. 	  Severe:   no water.	  Deep to water   	Percs slowly,   slope, depth   to rock.	_	_				

Table 16.--Water Management--Continued

		Limitations for-	· <b>-</b>	Features affecting							
Map symbol and soil name		r Embankments,   dikes, and	Aquifer-fed   excavated	   Drainage	   Irrigation	Terraces and   diversions	Grassed   waterways				
	<u> </u>	levees	ponds	<u> </u>	<u> </u>	<u> </u>	<u> </u>				
207:	 	I	1	 	l I	l I	l I				
Vonid	Severe:   seepage.	Severe:	Severe:   no water.	Deep to water	Slope,   soil blowing.	  Soil blowing 	  Too arid. 				
Midway	  Severe:   depth to   rock.	  Severe:   thin layer. 	  Severe:   no water. 	  Deep to water   	  Percs slowly,   slope, depth   to rock.	  Percs slowly,   depth to   rock.	  Too arid,   depth to   rock.				
	ļ.	!	!	!	!	!	!				
208: Vonid	  Severe:	  Severe:	  Severe:	Deep to water	  glone	  Slope,	  Slope,				
VOIII	seepage,   slope.	piping.	no water.	 	soil blowing.						
Seldom	  Severe:   seepage,   slope.	Severe:   piping,   wetness.	  Severe:   slow refill. 	  Slope     		  Slope,   wetness,   soil blowing.	  Slope,   wetness.   				
209:	i	i	i	i	i	İ	İ				
Wages	Severe:   seepage. 	Severe:   piping.	Severe:   no water.	Deep to water   	Slope    	Favorable   	Too arid.   				
210:	İ	i	i	i	İ	j	j				
Wages	Severe:   seepage,   slope.	Severe:   piping. 	Severe:   no water. 	Deep to water   	Slope    	Erodes easily,   slope. 	Erodes easily,   slope,   too arid.				
211:	İ	i	i	i	i	İ	İ				
Wages, dry	Severe:   seepage. 	Severe:   piping.	Severe:   no water.	Deep to water   	Slope    	Erodes easily   	Erodes easily,   too arid. 				
212:	İ	İ	İ	İ	İ	ĺ	ĺ				
Wages	Severe:   seepage,   slope.	Severe:   piping. 	Severe:   no water. 	Deep to water	Slope    	Erodes easily,   slope. 	Erodes easily,   slope,   too arid.				
Karval	  Severe:   seepage,   slope.	Severe:   seepage.	Severe:   no water. 	  Deep to water   	  Slope,   droughty. 	  Slope,   too sandy. 	  Slope,   too arid,   droughty. 				
213:	İ	i	İ	i	i	į	į				
Weld	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water	Erodes easily,   percs slowly. 	Erodes easily,   percs slowly. 					
214:	İ	i	i	i	i	<u> </u>	i				
Weld, dry	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water   	Erodes easily,   percs slowly. 	Erodes easily, percs slowly.					
215:	İ	i	i	i	i	i	i				
Wiley	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water	Erodes easily   	Erodes easily   	Erodes easily,   too arid. 				
216:	I	Ţ	ļ.	ļ.	Į.	ļ.	ļ.				
Wiley	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water   	Erodes easily,   slope. 	Erodes easily   	Erodes easily,   too arid. 				
217:	ļ.	!	ļ.	ļ.	ļ	ļ.	ļ.				
Wilid	Severe:   seepage. 	Severe:   piping. 	Severe:   no water. 	Deep to water   	Erodes easily   	Erodes easily   	Erodes easily,   too arid. 				
218:	İ	İ	İ	İ	Ì	İ	İ				
Water.		ļ		1	Į.						
	I	I	1	1	I	I	I				

Table 16.--Water Management--Continued

		Limitations for			Features affecting							
Map symbol and	Pond reservoi	r Embankments,	Aquifer-fed		1	Terraces and	Grassed					
soil name	areas	dikes, and	excavated	Drainage	Irrigation	diversions	waterways					
		levees	ponds									
		Ī		İ	İ	İ	İ					
219:	İ	i	i	İ	İ	i	i					
Gravel pits	Severe:	Severe:	Severe:	Deep to water	Fast intake,	Large stones,	Large stones					
	seepage.	seepage.	no water.	İ	droughty.	too sandy.	droughty.					
	İ	İ	Ì	İ	İ	İ	İ					
220:	İ	İ	Ì	İ	İ	İ	İ					
Access denied.	İ	İ	İ	İ	İ	İ	İ					
	İ	i	i	i	i	i	i					

Table 17.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol	Depth	   USDA texture  _	Classif:	icati	on	Fragi	nents	:	rcentage	e passin	ng	  Liquid	   Plac-
and soil name	Copen		     Imitical		A CUTO	>10   >10	3-10	<u> </u>		40	200	limit	ticity
	In	1	Unified	l A	ASHTO	inches	Pct	4 	10 	40 	200 	Pct	index
ſ		i	 					i	! 	İ	<u> </u>		İ
101:		İ	ĺ	ĺ		İ	l	Ī	l	ĺ	ĺ	İ	ĺ
Apishapa, rarely	•					[		!	l	l	ļ	!	
ponded	•	Clay loam	•	A-6		0   0	0   0	100		•	•	30-40	
	8-60 	Silty clay	CH, CL	A-6, 	A-/	0	<sup>0</sup>	100 	100 	  90-100	/5-95 	30-55 	10-30
102:		i	 			i	i	i	i I	i	i	i	i
Arvada	0-4	Clay loam	CL	A-6		0	0	100	100	90 <b>-1</b> 00	70-80	30-40	10-20
	4-25	Clay	CL	A-7		0	0	100	100	90-100	70-95	40-50	15-25
	•	Clay	•	A-7		0	0	100		•	•	40-60	
	44-60	Clay loam	CL	A-6,	A-7	0	0	100	100	90-100	70 <b>-</b> 95	30-45	10-20
103:			 	l I			l I	 	l I	l I	l I		
Ascalon	0-4	Sandy loam	SC, SC-SM	A-2,	A-4	0	0	95-100	  90 <b>-1</b> 00	  60-75	30-40	25-30	5-10
ľ	4-15	Sandy clay loam	CL, SC, SC-SM	A-4		0	0	95-100	95-100	75 <b>-</b> 90	35-55	25-30	5-10
	15-60	Fine sandy loam	CL-ML, CL,	A-4		0	0	95-100	95-100	65-95	40-70	25-30	5-10
ļ			SC, SC-SM			[		!					ļ
104:		1	l I	 			l	1	  -	 	 		
Ascalon	0-4	Sandy loam	lsc.sc-sm	  A-2,	A-4	I I 0	l l 0	  95-100	I   90-100	l   60-75	I   30-40	  25-30	5-10
	•	Sandy clay loam	•	•		0		95-100	•	•	•	•	5-10
ľ	15-60	Fine sandy loam	CL, SC-SM,	A-4		0	0	95 <b>-1</b> 00	95 <b>-</b> 100	65-95	40-70	25-30	5-10
1			CL-ML, SC					I	l	l	l	1	
						!		!		!	!	!	!
105:   Ascalon	0.4	  Sandy loam	laa aa aw		2.4	   0	l I 0	  95-100	   00 100	 		125 20	   5-10
ASCATON	•	Sandy Clay loam	•	A-2,  a-4	A-4	1 0		95-100		•	•		5-10
ſ	•	Fine sandy loam	•	A-4		0		95-100		•	•		5-10
ľ		İ	SC, SC-SM	į		i i	i	İ	İ	İ	İ	i	į
!									l	l	l	1	
106:													
Ascalon, dry	•	Sandy loam  Sandy clay loam	•	A-2,	A-4	0   0		95-100  95-100		•	•		5-10   5-10
	•	Fine sandy loam	•	A-4		1 0		95-100		•	•		5-10
ſ	25 00		SC, SC-SM				ľ						5 25
ľ		İ	İ	į		i i	i	į	İ	į	į	i	į
107:		[					l	1			l	1	1
Ascalon, dry	•		•	A-2,	A-4	0		95-100	•	•	•	•	5-10
	•	Sandy clay loam  Fine sandy loam	•	A-4  A-4		0   0		95-100  95-100	•	•	•	•	5-10   5-10
ļ	13-00		CL-ML, SC	A-4		0	ı ° I		 	 	<del>1</del> 0-70	25-50	3-10
İ		į	İ	į		i i	i	i	İ	İ	İ	i	i
108:								1		l	l		1
Ascalon, dry		Sandy loam		A-2,	A-4	0						25-30	
		Sandy clay loam  Fine sandy loam		A-4  A-4		0   0			•	•	•	25-30 25-30	
	13-00		CL, SC-SM	<del></del>		İ	ı ° I		 	05-55 	<del>1</del> 0-70	25-50	] J-10
		i		i		i	i	i	İ	i	i	i	i
109:		I	l	l		1		I		l		1	
Ascalon	'	Sandy loam		A-2,	A-4	0		•		•	•	25-30	
		Sandy clay loam		:		0			•	•	•	25-30	:
	   T2-00	Fine sandy loam	CL-ML, CL,   SC, SC-SM	A-4 		0 	0 	95-100 	   32=T00	00 <b>-95</b> 	±0-70 	25-30 	5-10 
		i		İ		i		i		İ		i	İ
Haxtun	0-4	Loamy sand	SC-SM, SM	A-2		j o	0	100	95-100	50-75	15-30	20-25	NP-5
!		Sandy loam		A-2		0	0		•	•	•	25-30	
!	•	Sandy clay loam		A-6		0	0				•	30-35	
	44-60	Silt loam		A-2,	A-4	0	0	100	95-100 	60-95 	30-75 	25-30	5-10
	l	I	CL, SC-SM	I		I		I	I	I	I	I	1

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	Classif	icati	on		Fragi	ments		rcentage sieve n	e passi umber	ng	  Liquid	   Plas-
and soil name		į		I			>10	3-10	İ				limit	:
			Unified	A	ASHTO			inches	4	10	40	200	L	index
	In	1	 	l I			Pct	Pct 	l I	l I	 	 	Pct 	 
110:		İ	<u> </u>	İ				İ	İ	İ	i	i	i	
Ascalon, dry		Sandy loam		A-2,	A-4		0	•		•	60-75			5-10
		Sandy clay loam		:			0	:		:	75-90	:	:	5-10
	15-60	Fine sandy loam	CL-ML, CL,	A-4 			0	0 	95-100   	95-100   	65-95 	40-70 	25-30	5-10
  Haxtun, dry	0-4	Loamy sand	  sc-sm.sm	  A-2			0	   0	   100	  95-100	  50-75	  15-30	  20-25	  NP-5
		Sandy loam		A-2			0	0	'	•			25-30	
I	17-44	Sandy clay loam	CL, SC	A-6			0	0	100	95-100	80-100	35-80	30-35	10-20
	44-60	Silt loam	CL, SC-SM,   CL-ML, SC	A-2, 	A-4		0	0 	100 	95-100 	60-95 	30 <b>-</b> 75 	25-30 	5-10 
111:		 	 	 				 	 	 	 	 	 	 
Bacid		Silt loam		A-4			0	0	100	•			30-35	
ļ		Silty clay loam		A-7			0	0	100	:	:	:	40-50	:
		Silty clay  Silty clay loam		A-7  A-6,	A = 7		0	0   0	100   100	•			45-55  35-45	
	21-00			A-0, 	A-/			l o	100 	100 	 	70-93 	122-42	 
112:   Bankard,		į Į	   	 						İ	İ	İ	į	 
occasionally			! 	i I				i I	! 	i I	i	i	i	<u> </u>
flooded	0-5	Loamy sand	SC-SM, SM	A-2			0	0	100	100	50-75	15-30	20-25	NP-5
 	5-60	Loamy sand	SM, SP-SM,	A-1, 	A-3,	A-2	0	0 	85 <b>-</b> 100 	80 <b>-</b> 100 	40-85 	5-30 	20-25	NP-5 
Glenberg,		 	 	 				 	 	 	 	 	 	 
occasionally														
flooded		Fine sandy loam	SC-SM	A-4 			0	0	İ	İ	į	į	25-30	į
		Fine sandy loam	SC-SM	A-2, 			0	İ	İ	İ	55-85 	İ	į	5-10
 	32-60	Loamy sand	SM, SP-SM 	A-1,	A-3,	A-2	0	0 	  82-T00	  80-T00	40-75 	5-30 	0-0 	NP
113:			! 	! 				! 	l I	! 	i I	i	i	i
Bijou	0-4	Loamy sand	SC-SM, SM	A-2			0	0	100	95-100	50-75	15-30	20-25	NP-5
I		Loamy sand		A-2			0	0		•	50-75			NP-5
		Sandy loam		A-2,			0	0		•			25-30	
	36-60	Loamy sand	SM, SC-SM,   SP-SM, SW-SM	A-2, 	A-3		0	0 	100 	95-100   	50-75 	5-30 	20-25	NP-5 
114:		 	 	 				 	 	 	 	 	 	 
Bijou, moist		Loamy sand		A-2			0	0		•			20-25	:
	4-9	Loamy sand		A-2			0	0		•	50-75			NP-5
		Sandy loam		A-2,  A-2,			0	0   0	•				25-30 20-25	
ļ	30-00		SP-SM, SW-SM	:	n-J			"	100			5-30		NF - 5
115:			I 	I I				l I	l I	I I	l I	I I		I I
Bijou, moist	0-4	Loamy sand	SC-SM, SM	  A-2			0	0	100	95 <b>-</b> 100	50-75	15-30	20-25	  NP-5
i		Loamy sand		A-2			0	0	•				20-25	
!		Sandy loam	:	A-2,			0	0	•	•			25-30	•
 	36-60	Loamy sand	SM, SC-SM, SP-SM, SW-SM	A-2, 	A-3		0	0 	100 	95 <b>-</b> 100 	50-75 	5-30 	20-25	NP-5 
116:		 	 	 				 	 	 	 	 	 	 
Blakeland				A-2			0	•			50-75		:	NP
ļ	12-60	Loamy sand	:	A-2,	A-1,	A-3	0	0	95-100 	80-100 	35 <b>-</b> 60	5-25		NP
		!	SW-SM	I				!		!	!	!	!	I

Table 17.--Engineering Index Properties--Continued

Map symbol	   Depth	USDA texture	Classif	icatio	on	Fragi	ments	:	rcentago sieve n	_	ng	  Liquid	   Plas-
and soil name	İ	İ	İ	I		>10	3-10	i					ticity
	<u> </u>	<u> </u>	Unified	A2	ASHTO		inches	4	10	40	200		index
	In					Pct	Pct		 		 	Pct	
117:	! 		! 	l I		1	l I	i	! 	i İ	 		i
Bresser	0-3	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	95-100	  95 <b>-</b> 100	  55 <b>-</b> 70	30-40	20-25	NP-5
	3-13	Sandy clay loam	CL-ML, SC-SM,	A-4		0	0	95-100	95-100	75-100	30-80	25-30	5-10
		!	sc								l	1	
	13-60	Loamy coarse	•	A-1,	A-2	0	0	85-100	80-100	35-75	10-30	20-25	NP-5
	 	sand.	SP-SM	 		1	l I		 	 	 	1	
118:	 	I I	l I	l I		1	l I	l I	l I	 	l I		
Campo	0-3	Silt loam	ML	A-4		0	0	100	100	  90 <b>-</b> 100	70-90	30-35	5-10
	3-15	Silty clay	CH, CL	A-6,	A-7	0	0	95-100	95-100	85-100	75-95	35-65	15-40
	15-60	Silt loam	ML	A-4,	A-6	0	0	95-100	80-100	75-100	55-95	30-45	5-15
	!		!	!		!	!	ļ.	!	!	!	!	!
119: Canyon	   0-3	  Gravelly loam	lar wr. ar	  A-4		   0-10	0 15	  60-80		 		125 30	   5-10
Canyon	0-3 	Graverry roam	GC, GC-GM	A-4		1 0-10	U-13	60-80 	55-75 	30 - 70 	33-33 	25-30 	1 2-10
	3-10	Loam	•	A-4		0-10	0-15	60-95	  55-85	50-80	  35-70	25-30	5-10
	İ	İ	SC, GC-GM	i		i	İ	İ	İ	İ	İ	i	į
	10-14	Gravelly											
		weathered	!			-	!		!		!	!	!
		bedrock.				-					!	!	!
Rock outcrop	l l 0=60	Unweathered	l I	l I			l I	 	l I	 	l I		 
ROCK CULCTOP	1	bedrock.	! 	i		i	i i	i	! 	i I	i	i	i
	i		İ	i		i	i	i	i	i	i	i	i
120:	ĺ	İ	ĺ	ĺ		İ	ĺ	İ	ĺ	ĺ	ĺ	İ	İ
Colby		Silt loam	•	A-4		0	0	100	•	90-100	•		5-10
	5-60	Silt loam	ML	A-4		0	0	100	100	90-100	70-90	30-35	5-10
121:	 	1	 	 		1	l I		 	 	 	1	
Colby	l l 0-5	Silt loam	I IML	  A-4		I I 0	l l o	1 100	   100	  90-100	I   70-90	  30-35	5-10
00127		Silt loam	•	A-4		0	0	100	•	90-100	•		5-10
	İ	İ	İ	i		į	İ	į	İ	İ	İ	i	į
122:							l		l		l		
Colby		Silt loam	•	A-4		0	0	100	•	90-100	•		5-10
	5-60	Silt loam	ML	A-4		0	0	100	100	90-100	70-90 	30-35	5-10
Weld	   0-4	Silt loam	I Iмт.	  A-4		I I 0	l l o	1 100	   100	  90-100	I   70-90	1 130-35	5-10
		Silty clay	•	A-7		0	0	100	•		•	45-50	
		Silty clay loam	•	A-4,	A-7	0	0	100	100	95 <b>-</b> 100	85-95	30-50	5-15
	44-60	Silt loam	ML	A-4		0	0	100	100	90-100	70-90	30-35	5-10
	!		!	!		!	!	ļ.	!	!	!	!	!
123: Firstview		T commercian d	laa ay ay			   0	l I 0	   100	   05 100			120.25	 
FIRSTVIEW		Sandy clay loam	!	A-2  A-4,	A-6	0	0   0	:	:	:	:	20-25	:
	120		SC, SC-SM	,	11 0		l	1			33 /3 	1	3 13
	20-35	Clay	•	A-6,	A-7	, 0	0	100	95-100	80-100	35-95	30-45	10-20
	35-60	Loamy sand	ML, CL, SC,	A-2,	A-7,	0	0	100	95-100	50-100	15-95	20-45	NP-20
			SM	A-4	A-6						l		
124.						1	 	I		I	 	1	1
124: Fort Collins	l l 0-7	  T.oam	lct. ct.=mt.	  A-4		   0	l I 0	   100	  95=100	  85-95	l   60-75	25-30	   5-10
1010 00111119		Clay loam	•	A-6		0	0		•		•	30-35	
		Loam	•	A-4,	A-6	0	0		•		•	25-35	
	30-60	Loam	CL, CL-ML	A-4		0	0	100	95-100	85-100	60-90	25-30	5-10
	ļ.	ļ.	!	!		!		l	ļ.	I		1	1
125:													
Fort Collins	'	•		A-4		0   0	0   0		•		•	25-30	•
		Clay loam	•	A-6  A-4,	A-6	0   0	0   0		•		•	30-35 25-35	•
		Loam	•	A-4	0	0	0				•	25-30	
		i	– I	i		i	i .	i	İ	i	i	i	i

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	Classif:	icatio	on	Fragm	nents	:	rcentag	e passi: umber	ng	  Liquid	   Plas
and soil name	202011		I	l		>10	3-10	i				limit	•
		<u>i</u>	Unified	A	ASHTO	inches	inches	4	10	40	200	<u>i                                      </u>	index
I	In					Pct	Pct	l		I	I	Pct	
		!						!	l	!	ļ .	!	
126:	0.7	 											
Fort Collins		Loam   Clay loam	•	A-4  A-6		0	0		•	85-95  90-100			5-10  10-15
		Loam	•	A-4,	A-6	1 0	0		•			25-35	
		Loam	•	A-4	11 0	1 0	0		•	85-100			5-10
				i		i i		i	İ	i	İ	i	i
Karval	0-5	Gravelly loamy	SM, SC-SM,	A-1,	A-2	0-10	0-15	60-80	55-75	30-55	10-20	20-25	NP-5
I		•	SP-SM, SW-SM										
	5-40	Gravelly coarse	sw	A-1		0-10	0-15	60-80	55-75	25-40	0-5	20-25	NP-5
	40.60	sand.											
	40-60	Coarse sand		A-1		0-20	0-20	85-100	80-100	35-70	5-15	20-25	NP-5
		I I	SW-SM, SP-SM	 				l I	l I	l I	l I	1	
127:		i	! 	i		i i		! 	! 	i I	i I	i	i
Fort Collins	0-7	Loam	CL, CL-ML	A-4		i o i	0	100	'  95-100	  85-95	  60-75	25-30	5-10
i	7-13	Clay loam	CL	A-6		j o j	0	100	95 <b>-</b> 100	90 <b>-1</b> 00	70-80	30-35	10-15
1	13-30	Loam	CL, CL-ML	A-4,	A-6	0	0	100	95-100	85-100	60-80	25-35	5-15
I	30-60	Loam	CL, CL-ML	A-4		0	0	100	95-100	85-100	60-90	25-30	5-10
			<u> </u>								 		
Platner		Loam		A-4		0	0		•			25-30	•
		Clay loam  Silty clay loam	•	A-6,  A-6	A-7	0			•			35-50 30-40	
		Clay loam	•	A-2,	A-4	1 0			•			25-30	
	10 00		CL-ML, SC			"		100	00 ±00		1	1	1 3 10
		i		i		i i		i	i	i	i	i	i
128:		į	I	į		i i	į	į	İ	İ	İ	i	į
Fort Collins	0-7	Loam	CL, CL-ML	A-4		0	0	100	95-100	85-95	60-75	25-30	5-10
I	7-13	Clay loam	CL	A-6		0	0	100	95-100	90-100	70-80	30-35	10-15
		Loam	•	A-4,	A-6	0	0		•			25-35	•
	30-60	Loam	CL, CL-ML	A-4		0	0	100	95-100	85-100	60-90	25-30	5-10
Razor, moist	0-2	  Class loam	l cr	  A-6		1 0	0	   100	   100	   00_100	   70_90	  30-40	  10-20
Razor, moist		Silty clay	•	A-6,	A-7	1 0 1	0	100	•			35-65	•
		Silty clay	•	A-6,		0			•			35-65	•
i		Weathered		i		i i		i	i	i	i	i	i
İ		bedrock.		ĺ		i i		ĺ	ĺ	ĺ	ĺ	İ	ĺ
I											l		
129:								!	!			!	
Fort		Loam	•	A-4	- 4	0	0	100	•			25-30	:
		Sandy loam	•	A-2,  A-6	A-4	0	0	100   100	•	60-70  85-100		30-40	5-10
		Silty clay loam		A-6		1 0	0	100	•			30-40	•
	01 00		0_ 										
130:		į	İ	i		i i		İ	İ	i	i	i	i
Fort	0-2	Loam	CL, CL-ML	A-4		j o j	0	100	100	85-95	60-75	25-30	5-10
İ	2-5	Sandy loam	SC, SC-SM	A-2,	A-4	0	0	100	100	60-70	30-40	25-30	5-10
I		Clay loam	•	A-6		0	0	100	•			30-40	•
	34-60	Silty clay loam	CL	A-6		0	0	100	100	85-100	60-95	30-40	10-20
121.													!
131: Fort	0-2	  Loam	I Ст. ст.=мт	  A-4		1 0 1	0	   100	   100	  85-95	  60-75	25-30	   5_10
1010		Sandy loam	•	A-2,	A-4	1 0 1	0	100	•			25-30	•
		Clay loam	•	A-6	-	0	0	100	•			30-40	•
		Silty clay loam	•	A-6		0	0	100	•			30-40	
i		I	l			l i		I	l	I	I	1	
Karval	0-5	Gravelly loamy		A-1,	A-2	0-10	0-15	60-80	55-75	30-55	10-20	20-25	NP-5
I		•	SP-SM, SM			į l							
	5-40	Gravelly coarse	SW	A-1		0-10	0-15	60-80	55-75	25-40	0-5	20-25	NP-5
	40.50	sand.	law ag av				0.00					120.25	 
	40-60	Sand	om, SC-SM,	A-1		U-20	0-20	102-T00	len-Tno	35-70	1 2-T2	20-25	NP-2
i		1	SW-SM, SP-SM	1				I	I	I	1	1	1

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	Classi: 	fication	Frag	ments	:	rcentag sieve n	e passi: umber	ng	  Liquid	   Plas-
and soil name				1	>10	3-10	i				limit	•
			Unified	AASHTO	inches	inches	4	10	40	200		index
	In				Pct	Pct			!	!	Pct	!
120											!	!
132:	0-2	  Loam	ler er⊸wr	  A-4	   0	l l 0	   100	   100	 	  60-75	125-30	5-10
Fort		Sandy loam	•	A-2, A-4	1 0	l 0	100	'	85-95  60-70		•	5-10
		Clay loam	•	A-6	1 0	l 0	100	'	85 <b>-</b> 100		•	10-20
		Silty clay loam	•	A-6	1 0	1 0	100	100			30-40	
			İ		i	i	i	İ	İ	İ	i	i
Razor	0-2	Clay loam	CL	A-6	j o	0	100	100	90-100	70-80	30-40	10-20
1	2-21	Silty clay	CH, CL	A-6, A-7	0	0	100	100	90-100	70-95	35-65	15-40
I	21-27	Silty clay	CH, CL	A-6, A-7	0	0	90-100	85-100	85-100	70-95	35-65	15-40
	27-37	Weathered   bedrock.	 			 		 	 	 		
133:		l I	 	I I	l	1	 	l I	 	 		
Haversid, rarely		I I	I I	I I	i	I I	I I	l I	I I	I I	I I	I I
		Silt loam	IML	A-4	0	0	100	1 100	90-100	  70-90	  30-35	5-10
		Stratified loam	•	A-4, A-6	0	0	85-100	•			•	5-15
į		to clay loam.	į		į	į	į	İ	į	į	į	į
134:		l I	 			 	 	 	 	 	 	 
Haverson, rarely		İ	ĺ	Ì	İ	İ	ĺ	ĺ	ĺ	ĺ	İ	İ
flooded	0-5	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
I		Clay loam	•	A-6	0	0	100				30-35	10-15
	15-60	Clay loam	CL-ML, CL,	A-2, A-4	0	0	100	100 	60 <b>-1</b> 00	30-80 	25-30	5-10
			BC, BC-BM 	 	i	i	i i	l I	! !	! 	<u> </u>	<u> </u>
135:		i	i I	i	i	i	i	İ	i	i	i	i
Haxtun	0-4	Loamy sand	SC-SM, SM	A-2	j o	0	100	95 <b>-</b> 100	50-75	  15-30	20-25	NP-5
j	4-17	Sandy loam	SC, SC-SM	A-2	0	0	100	95 <b>-</b> 100	60-70	30-40	25-30	10-15
1	17-44	Sandy clay loam	CL, SC	A-6	0	0	100	95-100	80-100	35-80	30-35	10-20
I	44-60	Silt loam	CL-ML, CL,	A-2, A-4	0	0	100	95-100	60-95	30-75	25-30	5-10
			SC, SC-SM			 	 	 	 	 		
136:			! 		i	i	İ	l I	i	 	ŀ	
Haxtun, dry	0-4	Loamy sand	SC-SM, SM	A-2	0	0	100	95 <b>-</b> 100	50-75	15-30	20-25	NP-5
Ì	4-17	Sandy loam	SC, SC-SM	A-2	0	0	100	95-100	60-70	30-40	25-30	10-15
I	17-44	Sandy clay loam	CL, SC	A-6	0	0	100	95-100	80-100	35-80	30-35	10-20
I	44-60	Silt loam	CL-ML, CL,	A-2, A-4	0	0	100	95-100	60-95	30-75	25-30	5-10
			SC, SC-SM								!	
137:		1	l I	I I	l I	I I	l I	l I	I I	I I	l I	I I
Haxtun, dry	0-4	Loamy sand	lsc-sm.sm	  A-2	0	l   0	100	ı   95–100	  50-75	  15-30	20-25	NP-5
		Sandy loam	•	A-2	0	0		•			25-30	
i	17-44	Sandy clay loam	CL, SC	A-6	j o	0	100	95-100	80-100	35-80	30-35	10-20
1	44-60	Silt loam	CL, CL-ML,	A-2, A-4	0	0	100	95-100	60-95	30-75	25-30	5-10
ļ		I	SC-SM, SC		I			 				
Olnev	0-7	Loamy sand	l  sc-sm.sm	  A-2	   0	   0	   100	  95–100	I   50-75	  15-30	  20-25	  NP-5
021107		Sandy clay loam	•	A-4, A-6	1 0	1 0		•			25-35	•
			CL, SC-SM		i	i	i		İ	İ	i	i
i	36-46	Sandy clay loam	•	A-2, A-4	j o	0	85-100	80-100	50-90	25-55	20-30	NP-10
i		İ	SM, SM	j	j	İ	į	İ	İ	İ	į	į
1	46-60	Sandy loam	CL, ML, SM,	A-1, A-2, A	-4 0	0	85-100	80-100	40-90	15-55	20-30	NP-10
			SC-SM		1							
138:		1	 		I I	 	 	 	[ [	 	 	 
Haxtun	0-4	Loamy sand	SC-SM, SM	  A-2	0	0	100	  95-100	  50-75	  15-30	20-25	  NP-5
i		Sandy loam	•	A-2	0	0					25-30	•
i	17-44	Sandy clay loam	CL, SC	A-6	j 0	0		•			30-35	•
i	44-60	Silt loam	CL-ML, SC,	A-2, A-4	0	0	100	95-100	60-95	30-75	25-30	5-10
İ			CL, SC-SM			I		l	I	I		1
											1	1

Table 17.--Engineering Index Properties--Continued

	   Depth	USDA texture	Classif 	ication	i	ments	:	rcentag sieve n	e passi: umber	ng	  Liquid	
and soil name	ļ	ļ.	!	!	•	3-10	ļ				limit	:
	<u> </u>		Unified	AASHTO		inches	4	10	40	200	<u> </u>	index
	In				Pct	Pct					Pct	
138:	l I	 	 	I I	l I	I I	I I	l I	I I	I I	l I	l I
Olnest	l   0-8	Loamy sand	I ISC-SM.SM	  A-2	l I 0	l 0	1 100	і   95–100	I   50-75	  15-30	20-25	NP-5
	•	Sandy clay loam	•	A-2, A-4	0	0	•	•	60-90			5-10
	İ	į	CL, SC-SM	į	İ	į	į	İ	İ	İ	İ	į
	38-60	Loam	CL-ML, CL,	A-2, A-4	0	0	100	95-100	60-90	30-55	25-30	5-10
		1	SC, SC-SM							l		
						ļ	!				ļ	
139:	0 10	  Gilt leam	   her		l I 0	   0	1 100	   100	   00 100			   E 10
Keith	•	Silt loam  Silty clay loam	•	A-4  A-6, A-4, A-7		l 0	100   100	•			30-35 30-45	•
	•	Silt loam	•	A-4	l 0	I 0	100				30-35	•
			 		i	i						
140:	İ	İ	İ	į	İ	į	į	İ	İ	İ	İ	į
Keith	0-10	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
	•	Silty clay loam	•	A-4, A-6, A-7	0	0	100	•	90-100			5-15
	26-60	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
444												
141: Kim	   0_4	 	ler er-wr	  A-4	l l 0	   0	   100	   100	  85-95	  60-75	125-20	   5-10
KIM	•	Loam	•	A-4, A-6	l 0	l 0	100	•	85-100			5-10   5-15
		Clay loam		A-2-6, A-2-4,							25-35	
			SC, SC-SM	A-6, A-4	i	i						
	İ	İ	İ	į	İ	į	į	İ	İ	İ	İ	į
142:		I	l						I	I		
Kim		Loam		A-4	0	0	100	•	85-95			5-10
	•	Loam	•	A-4, A-6	0	0	100	•	85-100			5-15
	38-60	Clay loam	:	A-2-6, A-6,	0	0	85-100	80-100	50-100	25-80	25-35	5-15
	 	1	SC, SC-SM	A-2-4, A-4	 	1		 		 		
143:	l I	 	 	 	l I	I I	l I	l I	l I	l I	l I	l I
Kimst	l 0-5	Loam	CL, CL-ML	  A-4	l I 0	l 0	  95-100	ı  95−100	  85-95	l  60-75	25-30	   5-10
	•	Sandy clay loam	•	A-4, A-6	0		90-100	•				5-15
	İ	į	İ	į	İ	į	į	İ	İ	İ	İ	į
144:		I	l						I	I		
Kimst	•	Loam	•	A-4	0		•	•			25-30	•
	5-60	Sandy clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	85-100	60-80	25-35	5-15
145:	 	1			 	1		 		 		
Las Animas,	l I	I I	 	 	l I	I I	l I	l I	l I	l I	l I	l I
occasionally	! 	i	i I	i	i I	i	i	! 	i I	! 	i	i
flooded	0-6	Sandy loam	SC, SC-SM	A-2, A-4	0	,   0	100	100	  60-70	30-40	25-30	5-10
	6-10	Stratified	ML, CL-ML,	A-1, A-2, A-4	0	0	85-100	80 <b>-1</b> 00	40-95	15-75	20-25	NP-5
	l	loamy sand to	SC-SM, SM		l			l	I	l		
		sandy loam to		1								
		loam.										 
	10-60		SM	A-1, A-2, A-4	0	0	85-100	80-100	40-95	15-75	20-25	NP-5
	l I	loamy sand to sandy loam to	 	 	l I	I I	l I	l I	l I	l I	l I	l I
	! 	loam.	i I	İ	! 	i	i	! 	i i	l I	i	i
	İ		İ	i	İ	i	i	İ	i	i	i	i
146:	İ	İ	İ	İ	İ	i	i	İ	İ	İ	į	i
Limon, rarely	l	I	l	1	l	I	I	I	I	I		
flooded	•	Clay		A-7	0	0	100	•			40-65	•
	6-60	Clay	MH, ML	A-7	0	0	100	100	90-100	85-95	45-70	15-35
145	l				l	Į.	Į.	l	I	I		I
147:	 	1	  -	1	l I	1	1	l	1	1	1	1
Limon, moist, rarely flooded-	l l 0-6	  Clay	lenaren.	  A-7	l I 0	   0	   100	   100	   00-100	   75-05	  40-65	120-40
rarery rrooded-	•	Clay	•	A-7	l 0	l 0	100	•			45-70	•
	, 5 00 				İ	i	-55	, 	, , , , , , , , , , , , , , , , , , ,			1

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	 	Classi	ficati	on	Fragi	ments	:	rcentag	e passi: umber	ng	  Liquid	   Plas
and soil name	Depen	John Cevente	 		1		   >10	3-10	i				limit	:
			t	Unified	A	ASHTO	inches		4	10	40	200		index
	In	!			!		Pct	Pct	!	!	!	!	Pct	ļ.
148:		] [	 				 	 	 	 	 	 	1	 
Manzanola	0-5	Clay loam	CL		  A-6		l 0	,   0	100	100	  90-100	  70-80	30-40	10-20
		Clay loam	•		A-6,	A-7	0	0	100		90-100	•		15-25
į		Clay loam	•			A-4, A-7	0	0	85-100			•		5-15
149:		 	 		l I		 	 	 	 	 	 	 	l I
Manzanst, rarely		i	İ		i		i I	i I	i	i	i	i	i	i
flooded	0-3	Clay loam	CL		A-6		0	0	100	100	90 <b>-1</b> 00	70-80	30-35	10-15
İ	3-37	Clay loam	CL		A-6,	A-7-6	0	0	100	100	90-100	70-95	35-50	15-25
	37-60	Silty clay loam	CL		A-6,	A-7-6	0	0	100	100	90-100	70-95	30-45	10-20
150:		] ]	 				 	 	 	 	 	 	 	 
Manzanst	0-8	Clay loam	CL		A-6		0	0	100	100	  90 <b>-1</b> 00	70-80	30-35	10-15
i	8-18	Clay loam	CL		A-6,	A-7	0	0	100	100	90-100	70-95	30-45	10-20
j	18-40	Silty clay loam	CL		A-6,	A-7	0	0	100	100	90-100	70-95	35-50	15-25
	40-60	Silty clay loam	CL		A-6,	A-7	0	0	100	100	90-100	70-95	30-45	10-20
151:		 	l I				 	 	[ [	[ [	[ [	 	 	l I
Midway	0-4	Clay loam	CL		A-6		0	0	100	100	90 <b>-</b> 100	70-80	30-40	10-20
i	4-15	Clay loam	CL		A-6,	A-7	0	0	95-100	95-100	90-100	70-95	30-45	10-20
İ	15-25	Weathered	ĺ		İ									
		bedrock.					l	ļ	Į.				1	
152:			 		l I		l I	l I	 	l İ	l İ	l I		l I
Midway, moist	0-4	Clay loam	CL		A-6		0	0	100	100	90 <b>-1</b> 00	70-80	30-40	10-20
j	4-15	Clay loam	CL		A-6,	A-7	0	0	95-100	95-100	90-100	70-95	30-45	10-20
1	15-25	Weathered			1									
		bedrock.					l	ļ	Į.				1	
153:			 		l I		l I	l I	 	l İ	l İ	l I		l I
Midway	0-4	Clay loam	CL		A-6		0	0	100	100	90 <b>-1</b> 00	70-80	30-40	10-20
·	4-15	Clay loam	CL		A-6,	A-7	0	0	95-100	95 <b>-</b> 100	90-100	70-95	30-45	10-20
1	15-25	Weathered			1									
ļ		bedrock.											1	
Razor	0-2	  Clay loam	CL		  A-6		   0	   0	   100	   100	  90 <b>-</b> 100	  70-80	30-40	10-20
i	2-21	Silty clay	CH,	CL	A-6,	A-7	0	0	100	100	90-100	70-95	35-65	15-40
Ì	21-27	Silty clay	CH,	CL	A-6,	A-7	0	0	90-100	85-100	85-100	70-95	35-65	15-40
	27-37	Weathered			ļ									
		bedrock.	 		l I		l İ	 	 	 	 	l I	I I	l I
154:		i	İ		i		İ	İ	i	i	i	İ	İ	i
Midway, moist		Clay loam	•		A-6		0	0	100			•	30-40	'
		Clay loam	CL		A-6,		0	0	95-100	95-100		•	30-45	:
	15-25	Weathered   bedrock.	 				 	 	 	 	 	 		
			İ		i		İ	İ	İ	İ	İ	İ	İ	i
Razor, moist			•		A-6		0	0	•			•	30-40	
		Silty clay	•		A-6,		0	0	100			•	35-65	
		Silty clay	CH,		A-6,		0	:	90-100	85-100		•	35-65	:
	27-37	Weathered   bedrock.	l I		l I		 	 	 	 	 	 		 
i		İ	İ		i		İ	İ	İ	İ	İ	İ	i	i
155:	0.4	  Clay los=	   CT						100		100-100		120-40	110.22
Midway		Clay loam	•		A-6  A-6,	3 – 7	0   0	0   0	100			•	30-40 30-45	
		Weathered	l LCn		A-0,	A-/	0 	0 				/0-95 	30-45	
i	15-25	bedrock.		-	Ϊ									
į		!			ļ		ļ	!	!	!	!	!		ļ
Rock outcrop	0-60	•											0-14	
		bedrock.	l		!		!	!	!	Į.	I	I	1	!

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	Classif:	icati	on	Fragi	nents	:	rcentago sieve n	e passinumber	ng	  Liquid	   Plas-
and soil name			   	-	A CUMO	>10	3-10	i			1 200	limit	ticity
	In	1	Unified	∣ A I	ASHTO	inches	inches Pct	4 	10 	40 	200 	Pct	index 
		İ	İ	i				İ		İ	İ	i	i
156:		!									l		
Midway, moist		Clay loam	•	A-6	_	0	0	100		90-100	•	•	10-20
		Clay loam	CT	A-6,		0	0	95-100	95-100	90-100	70-95	30-45	10-20
	15-25	Weathered   bedrock.	 	 			 	 	 	 	 		 
Rock outcrop,			 	 		I	 	 	 	 	 		 
moist	0-60	Unweathered		' 		i					' 	0-14	i
		bedrock.		į		į		İ		İ	İ		į
157:		İ	 	 			 	 	 	 	 		 
Nunn	0-5	Clay loam	CL	A-6		0	0	100	95-100	85-100	65-80	30-35	10-15
I	5-19	Clay	CL, SC	A-6,	A-7	0	0	100	95-100	75-100	35-95	30-45	10-20
	19-60 	Sandy loam	SC, CL, SC-SM	A-2, 	A-4	0 	0 	100 	95 <b>-</b> 100 	60-100 	30-80 	25-30 	5 <b>-1</b> 0
158:			 			į		   100	 	 	 		 
Nunn		Clay loam	:	A-6	7 - 7	0   0	0   0			•	•	30-35	•
		Sandy loam		A-6,		I 0	0   0		•	•	•	30-45 25-30	•
	19-60		SC, CL, SC-SM	A-2, 	A-4	0	0	100			30-80	25-30	5-10
Sampson, rarely flooded		  Toom	lar ar w	  a-4		   0	   0						
1100ded		Loam		A-4  A-4,	3-6	1 0		95-100  95-100	•	•	•	•	5-10   5-15
		Loam		A-4,  A-4	A-0	1 0		95-100	•	•	•	•	5-10
159:			l					I	l	l	l		
Nunn, dry		Clay loam	•	A-6		0	0			•	•	30-35	•
		Clay	•	A-6,		0	0			•	•	30-45	•
	19-60 	Sandy loam	SC, CL, SC-SM 	A-2, 	A-4	0 	0 	100 	95 <b>-</b> 100 	60-100 	30-80 	25-30	5 <b>-1</b> 0
Sampson, dry,		İ	İ	ĺ		İ		ĺ		ĺ		İ	İ
rarely flooded-		Loam	•	A-4		0		95-100		•	•	•	5-10
		Clay loam	•	A-4,  A-4	A-6	0   0		95-100		•	•	•	5-15
	36-60	Loam	CL, CL-ML	A-4		0	U	95-100 	  95-100	65 <b>-9</b> 5 	60-80 	25-30 	5 <b>-1</b> 0
160:		İ	İ	i		i	İ	i	İ	İ	İ	i	i
Olnest	0-8	Loamy sand	SC-SM, SM	A-2		0	0	100	95-100	50-75	15-30	20-25	NP-5
	8-38	Sandy clay loam	:	A-2,	A-4	0	0	100	95-100	60-90	30-55	25-35	5-10
		1-	SC, SC-SM						 				
	38-60	Loam	CL-ML, SC,	A-2, 	A-4	0	0 	100 	95-100 	60-90 	30-55 	25-30	5-10 
								i	 	İ		i	 
161:		!	!	!		ļ		ļ.		l	!	ļ.	!
Olnest		Sandy loam	•	A-2,		0	0				•	25-30	:
	8-38	Sandy clay loam	•	A-2,	A-4	0	0	100	95-100	60-90	30-55	25-35	5-10
	   38=60	  Loam	CL, SC-SM	  A-2,	<b>A-4</b>	l l 0	l   0	   100	l   95-100	  60 <b>-</b> 90	   30-55	  25=30	5-10
i			SC, SC-SM	,			ľ						3 10
162:			 	 		I	 	 	 	 	 	 	 
Olnest	0-8	  Sandy loam	SC, SC-SM	  A-2,	A-4	   0	l   0	   100	  95-100	  60-70	  30-40	25-30	   5-10
<del>-</del>		Sandy clay loam	•	A-2,		0	0		•	60-90	•	•	5-10
i			SC, SC-SM	İ		i	İ	İ	İ	İ	İ	i	i
	38-60	Loam	CL, CL-ML,	A-2,	A-4	0	0	100	95 <b>-</b> 100	60-90 	30-55	25-30	5-10
			50 511, 50			i		İ					
163:													
Olnest		Sandy loam	•	A-2,		0	0		•	•	•	25-30	:
	8-38 	Sandy clay loam	CL-ML, CL,	A-2,	A-4	0	0 	100 	95-100 	60-90 	30-55 	25-35 	5-10 
	38-60	  Loam	•	  A-2,	A-4	0	   0	   100	  95 <b>-</b> 100	  60-90	  30 <b>-</b> 55	25-30	   5-10
i		I	CL-ML, SC	l		İ						I	

Table 17.--Engineering Index Properties--Continued

Man	Den+1	HeDa tout	Classi	fication	Frag	ments	:		e passi	ng	 	   p1
Map symbol and soil name	Depth 	USDA texture		1	.    >10	3-10	[ : [	sieve n	umber		Liquid  limit	:
	! 		Unified	AASHTO		inches	4	10	40	200		index
	In		I	I	Pct	Pct	I		I		Pct	
164:												
Olney	   0-7	Loamy sand	SC-SM, SM	  A-2	l   0	l I 0	1 100	ı  95−100	  50-75	  15-30	  20-25	  NP-5
5-1102	•	Sandy clay loam	•	A-4, A-6	0	0		•	80-90	•	•	5-15
			CL, SC-SM									
	36-46 	Sandy clay loam	ML, CL, SC-   SM, SM	A-2, A-4	0 	0 	85-100 	80 <b>-1</b> 00 	50-90 	25 <b>-</b> 55 	20-30	NP-10
	46-60	Sandy loam	•	A-1, A-2, A-4	0	0	  85 <b>-</b> 100	  80-100	  40-90	15-55	20-30	  NP-10
	l	!	SM, SM	1	1	1	1	l	1		1	
165:	  -							 				 
Olney	   0-4	Sandy loam	SC-SM, SM	  A-2, A-4	0	0	1 100	ı  95−100	  60-70	30-40	  20-25	  NP-5
-	•	Sandy clay loam	•	A-4, A-6	j 0	0		•	80-90	•	•	5-15
			SC, SC-SM									
	18-31 	Sandy loam	ML, CL, SC-	A-2, A-4	0 	0 	85 <b>-</b> 100	80-100 	50-90 	25-55	20-30	NP-10
	31-60	Loamy sand	•	A-1, A-2, A-4	0	0	  85 <b>-</b> 100	  80-100	  40-90	15-55	20-30	  NP-10
	l	!	SC-SM	1	1	1	1	l	1		1	
166:	  -							 				 
Olney	   0-4	Sandy loam	SC-SM, SM	  A-2, A-4	0	0	1 100	ı  95−100	  60-70	30-40	  20-25	  NP-5
	4-18	Sandy clay loam	CL, CL-ML,	A-4, A-6	j o	0	100	95 <b>-</b> 100	80-90	35-55	25-35	5-15
			SC-SM, SC									
	18-31	Sandy loam	SM, SM	A-2, A-4	0 	0 	  82-T00	  80-100	50-90 	25-55	20-30	  NP-10
	31-60	Loamy sand	:	A-1, A-4, A-2	0	,   0	  85-100	  80-100	  40-90	15-55	20-30	  NP-10
	ļ.	ļ.	SC-SM	İ	1	1	1	ļ.	I		!	
167:	  -	l I	l I					 	 	 		 
Olney	0-4	Sandy loam	SC-SM, SM	A-2, A-4	0	0	1 100	  95-100	  60-70	30-40	20-25	  NP-5
	4-18	Sandy clay loam	CL, CL-ML,	A-4, A-6	0	0	100	95-100	80-90	35-55	25-35	5-15
			SC-SM, SC		   0	   0						
	18-31	Sandy loam	SM, SM	A-2, A-4	1	0 	  82-T00	  80-100	50-90 	25-55	20-30	  NP-10
	31-60	Loamy sand	:	A-1, A-2, A-4	0	,   0	  85 <b>-1</b> 00	  80 <b>-</b> 100	40-90	15-55	20-30	NP-10
			SC-SM	1	!	ļ.	ļ.		ļ		ļ.	
168:	l I	l I	I I	I	-	 	 	l I	l I	 		 
Olney	0-4	Sandy loam	SC-SM, SM	A-2, A-4	0	,   0	100	  95-100	  60-70	30-40	20-25	NP-5
	4-18	Sandy clay loam		A-4, A-6	0	0	100	95-100	80-90	35-55	25-35	5-15
	   18_31	  Sandy loam	SC, SC-SM	  A-2, A-4	   0	   0	  85_100	   80_100	  50-90	125-55	20-30	  ND_10
	10 51		CL, SM									
	31-60	Loamy sand	:	A-1, A-2, A-4	0	0	85-100	80-100	40-90	15-55	20-30	NP-10
	  -		SM, SM					 				 
Midway	0-4	Clay loam	Cr	  A-6	0	0	1 100	1 100	  90-100	70-80	30-40	10-20
		Clay loam	Cr	A-6, A-7	0	0	95-100	95-100	90-100	70-95	30-45	•
	15-25	Weathered   bedrock.										
	i I	Dear ock.				! 	! 	 	! 			
169:	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	į
Otero	•			A-2, A-4	0	0		•		•	25-30	•
	13-60 	Sandy loam	SC-SM, SM	A-2, A-4	0 	0 	100 	100 	50 <b>-</b> 75 	15-40 	20-25	NP-5 
170:	i	İ	i	i	İ			İ		i	İ	i
Oterodry	0-11	Fine sandy loam	:	A-4	0	0	100	100	70-85	40-55	20-25	NP-5
	   11-60	  Fine sandy loam	SM, CL-ML	  A-2, A-4	   0	   0	   100	   90-100	  55-85	  30-55	20-25	  ND-5
		1-110 Sandy 10am	SC-SM, SM	A A A A								
	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ

Table 17.--Engineering Index Properties--Continued

174:				Classif	icati	on	Fragi	ments	:	rcentage	_	ng									
Total   Tota		Depth	USDA texture		1			J 3-10	: 	sieve n	ımber		: -								
1711	and soll name	l I	1	   Unified	l I A	ASHTO			   4	1 10	l 40	l 200		index							
Decodity		In	İ										Pct								
Octodry	171.	 						 		 	 	 	 	 							
1721		   0-11 	Fine sandy loam	:	  A-4 		   0 	   0 	   100 	   100 	  70-85 	  40-55 	20-25	  NP-5 							
Description   10		11-60	Fine sandy loam	:	A-2,	A-4	0	0	100	  90 <b>-</b> 100 	  55 <b>-</b> 85 	30-55	20-25	NP-5							
17-15   Clay Joans   CL.   A-6, A-7   0   0   95-100   85-100   75-100   60-95   35-50   35-50   15-100	172:	 	 	 	 		 	 	 	 	 	 	 	 							
15-40   Silty clay loam   Ct.   A-6   0   0   95-100   85-100   85-100   30-30   30-80   25-30   173:   Ct.   Ct	Platner	0-7	Loam	CL, CL-ML	A-4		0	0	100	95-100	80-95	55-75	25-30	5-10							
173:		•		•	A-6,	A-7				'	'	'	'	'							
173;   174		•		•	:				•												
Platner		40-60	Clay loam	:	A-2,	A-4	0	0 	95 <b>-</b> 100 	80-100	65-100 	30-80	25-30	5-10							
7-15   Clay loam	173:	 	 	 	 		 	Platner	0-7	Loam	CL, CL-ML	A-4		0	0	100	95-100	80-95	55-75	25-30	5-10
Ascalon		7-15	Clay loam	CL	A-6,	A-7	0	0	95-100	85-100	75-100	60-95	35-50	15-25							
Ascalon		•		•	A-6		0	0	95-100	85-100	80-100	75-95	30-40	10-20							
4-15   Sandy clay loam   CL, SC, SC-SM   A-4   0   0   0   95-100   95-100   75-90   35-55   25-30   15-60   Fine sandy loam   CL, EML, CL,   A-4   0   0   0   95-100   95-100   65-95   40-70   25-30   17-80   18-55   25-30   18-50   18		40-60 	Clay loam	!	A-2, 	A-4	0 	0 	95 <b>-</b> 100 	80-100 	65-100 	30-80 	25-30 	5-10 							
4-15   sandy clay loam   CL, SC, SC-SM   A-4	Ascalon	   0-4	  Sandy loam	  sc.sc-sm	  A-2,	A-4	   0	   0	  95-100	  90-100	  60-75	  30-40	  25-30	   5-10							
174:   Pleasant, rarely		•		•			0		•					5-10							
Pleasant, rarely		15-60	Fine sandy loam	!	A-4 		0 	0 	  95 <b>-</b> 100 	95-100 	65-95 	  40-70 	25-30 	5-10							
Donded	174:	 		 	 		 	Pleasant, rarely	l		l				l				I		
175:	ponded		•	•	A-4		0	0						5-10							
Rago, rarely		•		•	:	A-4, A-7								15-35   5-20							
Rago, rarely	175:	 	 	 	 		 		i	i	İ	i		i	i	i	i I	i I	i	i	İ
176:		0-10	Silt loam	ML	A-4		0	0	100	100	90-100	70-90	30-35	5-10							
176:		10-47	Silty clay	ML	A-7		0	0	95-100	95-100	95-100	85-95	45-50	15-20							
Rago, dry, rarely flooded-		47-60 	Silt loam	CL, CL-ML 	A-4 		0 	0 	95 <b>-</b> 100 	95 <b>-</b> 100 	85 <b>-</b> 100 	60-90 	25-30 	5 <b>-1</b> 0							
rarely flooded-			į		į		į	į	į			į	į								
10-47   Silty clay   ML		   0_10	  Gilt loam	  MT	   a _ 4		I 0	l I 0	   100	   100	   00_100	   70_90	20-25	   E_10							
47-60   Silt loam	_	•	•	:	:					•	•			•							
Razor		•		•	:					'	'	'	'	'							
2-15   Silty clay  CH, CL	177:	 		 	 		 	Razor	•		:	:		0				•			•
27-37   Weathered				1 -				1		•	•		'								
178:  Razor, moist   0-2   Clay loam   CL   A-6   0   0   100   100   90-100   70-80   30-40		•	Weathered		A-6, 		0 	:				:	:	15-40 							
Razor, moist   0-2   Clay loam   CL		 						<u> </u>		 	 	!									
2-15   Silty clay  CH, CL		l l 0-2	  Clav loam	l let.	   A-6		I I 0	l I o	l l 100	l l 100	   90=100	   70-80	  30-40	  10-20							
15-27   silty clay   CL, CL	idadi, moisc			•		A-7															
bedrock.		•		•				0													
Sampson, rarely		27-37 		 	 		 	179:	 		 	 		l I	 	l I	 	 	l I	 	 
7-36   Clay loam  CL, CL-ML		į	İ	i	i		i	İ	i			İ	i	İ							
	flooded	0-7	Loam	CL, CL-ML	A-4		0	0	95-100	95-100	85-95	60-75	25-30	5-10							
		•		•		A-6			•												
36-60   Loam CL, CL-ML		36-60	Loam	CL, CL-ML	A-4		0	0	95-100	95-100	85-95	60-80	25-30	5-10							

Table 17.--Engineering Index Properties--Continued

Map symbol	   Depth	USDA texture	Classif	icati	on		Fragi	ments	:	centage	e passinumber	-	  Liquid	   Plas-
and soil name		İ	İ	l			>10	3-10	i				limit	
	<u> </u>	<u> </u>	Unified	A	ASHTO		inches	inches	4	10	40	200		index
	In						Pct	Pct	!		ļ		Pct	
180:	l I	 	l I	 			l I	l I	 		l I	l I	l I	l I
Sampson, dry,	i i	i	İ			i	i	İ	i		i	İ	i	i
rarely flooded-	0-7	Loam	CL, CL-ML	A-4		i	0	0	95 <b>-1</b> 00	95 <b>-</b> 100	85-95	60-75	25-30	5-10
	•	Clay loam	•	A-4,	A-6	- 1	0	•	95-100		•			5-15
	36-60	Loam	CL, CL-ML	A-4			0	0	95-100	95-100	85-95	60-80	25-30	5-10
181:	  -	 	 	 				  -			 	l I	 	 
Satanta	   0-4	  Loam	CL, CL-ML	  A-4			l l 0	l I 0	1 100	  95-100	  85-95	l   60-75	l   25-30	   5-10
	4-19	Loam	•	A-4,	A-6	i	0	0	•		85-100	•		5-15
	19-28	Loam	CL, CL-ML	A-4,	A-6	ĺ	0	0	100	95-100	85-100	60-80	25-35	5-15
	28-60	Loam	CL, ML, CL-ML	A-4			0	0	100	95-100	85-95	60-75	20-30	NP-10
100														
182: Satanta, dry	l   0-4	  Loam	l lct. ct.=mt.	  A-4			l l 0	l I o	   100	   95-100	  85-95	  60-75	  25=30	   5-10
bacanca, ary	•	Loam	•	A-4,	A-6	i	l 0	l 0	•		85-100			5-15
	•	Loam	•	A-4,		i	0	0	•		85-100			5-15
	28-60	Loam	CL-ML, CL, ML	A-4		ĺ	0	0	100	95-100	85-95	60-75	20-30	NP-10
	!	!	<u> </u>			ļ		ļ	!		ļ		!	ļ .
183:	 	1						 				l		
Seldom, rarely flooded	l   0-7	  Sandy loam	l lac∟aw aw	  A-2,	n_4		l l 0	l I o	   100	   05_100	  60-70	  30_40	  20-25	  NP-5
1100ded	•	Sandy loam	•	A-2,			l 0	l 0			60-70			NP-5
		Sandy loam		A-2,			0	0			60-70	'	'	NP-5
	42-60	Stratified	ML, CL, SC,	A-2,	A-4,	A-6	0	0	100	95-100	60-95	30-60	20-40	NP-20
	   	sandy loam to sandy clay loam.	sm   	   				   	   		   	   	   	   
184:	  -	 	 	 				 			 	l		
Shingle	l   0-4	  Silty clay loam	I Імт.	l ΙΔ_4	A-6,	Δ-7	l l 0	l I o	   100	   95-100	  95-100	  85-95	  30-45	   5-15
2920	•	Silty clay loam	•	•	A-6,				95-100		•		30-45	5-15
	•	Weathered	i	į		i		i	i		i	i	i	i
		bedrock.	l			I		l			l	l	l	I
M: 3			l ar											
Midway	•	Clay loam	•	A-6  A-6,	Δ-7		0   0	0   0	100  95-100		90-100			10-20  10-20
	•	Weathered   bedrock.	 	A-0,   			•   	 	 	 	 	 	 	 
		I	ļ				l		1			l		1
185:														
Shingle, moist	•	Silty clay loam  Silty clay loam	•		A-6,			0   0	100  95-100		95-100	'	30-45  30-45	5-15   5-15
	•	Weathered		,		/								
	İ	bedrock.	İ	į		i	i	İ	i		İ	İ	i	i
		I	ļ				l		1			l		1
Midway, moist	•	Clay loam	•	A-6			0	0	100		90-100			
	•	Clay loam   Weathered	I	A-6,	A-7		0	0 	95-100	95-100		70-95 	30-45 	10-20
	13 23	bedrock.	! 	! 			l I	! 	İ		! 	l I	i I	İ
	j	İ	İ	į		i	i	j	į		į	İ	İ	İ
186:		I	l			- 1		l	1		l	l		l
Sundance		Loamy sand	•	A-2			0	•	95-100		•			NP-5
	8-17 	Sandy loam	SC, SC-SM	A-4 			0 	0 	95-100	  90-100	60-80 	35-55 	20-30 	5 <b>-</b> 10
	l   17-28	Clay loam	•	  A-6			l l 0	l I 0	1 100	   100	  90-100	l   70-85	l   25-40	  10-20
	•	Silt loam	•	A-4,	<b>A-6</b>		0	0	100		90-100	•		5-15
	l	I	I			İ			I		I		I	
187:	!	ļ.	ļ	ļ			l	ļ	ļ.		!	l	!	
Table Mountain,		 												
rarely flooded-	•	Loam   Clay loam	•	A-4  A-4,	Δ-6		0   0	0   0	100   100		85-95  85-100			5-10   5-15
	•		•	A-4,	A-0					1 100	122-100	100-00	20-00	'
	29-60	Loam	CL, CL-ML	A-4			0	l 0	85-100	80-100	70-95	50-75	25-30	5-10

Table 17.--Engineering Index Properties--Continued

Map symbol	   Depth	   USDA texture	Classif	icati	on	Fragi	nents		rcentag sieve n	_	ng	  Liquid	   Plas-
and soil name	ļ					>10	3-10					limit	
	   In	l	Unified	A 	ASHTO	inches	inches Pct	<u>4</u> 	10 	<u>40</u> 	200	Pct	index
	İ	İ	İ	İ		İ		İ	İ	İ	İ	İ	İ
188: Travessilla	   0-3	  Sandy loam	  sc.sc-sm	  A-2,	A-4	   0-10	   0-10	  85-100	  80-100	  59-70	  25-40	  25-30	   5-10
		Gravelly sandy	•	A-2		0-10		85-100					5-10
		loam.											
	13-23	Unweathered   bedrock.	<del></del> 	 									
Rock outcrop	   0-60   	Unweathered bedrock.	   	     			   	     	     	     	     	     	   
189:	İ	İ	İ	i		i		İ		İ	İ	<u> </u>	İ
Truckton	•	Sandy loam	•	A-2,		0	0		95-100		'		NP-5
	•	Sandy loam	SC-SM, SM	A-2,  A-1,		0   0		95-100  85-100				•	NP-5  NP-5
		sand.	SP-SM	,   									
190:	İ		i I	! 		i					İ		İ
Truckton	•	Sandy loam	•	A-2,		0		95-100				•	:
	:	Sandy loam	•	A-2,  A-1,		0   0		95-100  85-100					NP-5
		sand.	SP-SM	,   									
191:	! 	İ	 						 				İ
Truckton, dry	•	Sandy loam	:	A-2,		0   0		95-100  95-100				•	NP-5  NP-5
			SC-SM, SP-SM,	A-2,  A-1, 		0		95-100  85-100 					NP-5  NP-5
	į	į	İ	į		į		į	į	į	į	į	į
192: Truckton, dry	l l 0-6	  Sandy loam	  sc-sm, sm	  A-2,	A-4	   0	l l 0	  95-100	  95-100	  60-70	  30-40	  20-25	  NP-5
	•	Sandy loam	•	A-2,		, 0		95-100					NP-5
	16-60 	Loamy coarse   sand.	SM, SC-SM,	A-1,	A-2	0 	0	85 <b>-</b> 100 	80 <b>-</b> 100 	35-70 	10-25 	20-25	NP-5 
193:	 	I I	 	 			 	 	 	 	 	 	 
Valent	•	Sand	•	A-2,		0	0	100		50-70	5-15		NP
	3-60 	Sand	SM, SP-SM,	A-2, 	A-3	0	0	100	100	50-75 	5-30		NP
194:	 	l I	 	 				 	 	 	 	 	 
Valent	0-3	Sand		A-2,		0	0	100		50-70	5-15		NP
	3-60 	Sand	SM, SP-SM,	A-2, 	A-3	0	0	100	100	50-75 	5-30		NP
Bijou	   0-4	Loamy sand	  SC-SM, SM	  A-2		   0	   0	   100	  95 <b>-</b> 100	  50-75	  15-30	  20 <b>-</b> 25	  NP-5
	•	Loamy sand	:	A-2		0	0		95-100				
	•	Sandy loam  Loamy sand		A-2,  A-2,		0   0	0   0		95-100  95-100				
	 	 	SP-SM, SW-SM 	 			 	[ [	 	 	 	 	 
195:	ĺ	į	İ	İ		į		į	į	į	į	į	į
Valent	•	Sand	! '	A-2, A-2,		0   0	0   0	100   100		•	5-15   5-30	•	NP   NP
	5-00		SW-SM	A-2,	n-J						3-30		NF
Vona	•	Loamy sand	•	  A-2		0	   0	   100		•	  15-30	•	
	:	Sandy loam	!	A-2,		0	0		90-100	•		•	
	•	Sandy loam  Loamy sand	•	A-2,  A-2,		0   0	0   0	•	90-100  90-100			•	
196:	 	I I	 	 			] 	 	 	 	 	 	 
Valent	   0-3	  Sand	SM, SW-SM	  A-2,	A-3	0	0	100	1 100	50-70	   5-15		NP
	3-60	Sand	SM, SP-SM,	A-2,		j 0	0	100	100	50-75	5-30		NP
	l		SW-SM	I		I	l	I			1		1

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	Classif	icati	on	Fragi	ments	:	rcentage sieve n	_	ng	  Liquid	   Plas-
and soil name					3 G11TEO	>10	3-10		1 10	l 40	1 200	limit	
	In	1	Unified	<u>A</u> 	ASHTO	inches	Inches   Pct	<u>4</u> 	10 	40 	200 	Pct	index 
i		İ	İ	i		i		İ	İ	İ	İ	İ	i
196:	0.5												
Vonid		Loamy sand	:	A-2	3 4	0   0	0   0	100	100  90-100	50-75		:	NP-5
	6-34 34-52	Sandy loam	:	A-2,  A-2,		1 0	0   0	100   100		60-70  60-70		:	NP-5  NP-5
i	52-60	Sandy loam	•	A-2,		0	0	100	90-100	•		:	NP-5
 197:			 	 			 	 	 	 	 		 
Vona	0-7	Loamy sand	SC-SM, SM	A-2		0	0	100	100	  50-75	15-30	20-25	NP-5
Ì	7-16	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
	16-25	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
	25-60	Loamy sand	SC-SM, SM	A-2,	A-4	0	0 	100	90 <b>-1</b> 00	50 <b>-</b> 75	15-40 	20-25	NP-5
198 <b>:</b>			 			i	 	! 	 	! 	! 		 
Vona		Sandy loam	•	A-2,	A-4	0	0	100	100	60-70	30-40	25-30	5-10
I	7-16	Sandy loam	•	A-2,	A-4	0	0	100	90-100	60-70	'		NP-5
	16-25	Sandy loam		A-2,		0	0	100	•	60-70		:	NP-5
	25-60	Loamy sand	SC-SM, SM 	A-2, 	A-4	0 	0 	100 	90 <b>-1</b> 00 	50-75 	15-40 	20-25	NP-5 
199:		İ	İ	i		i	İ	İ	İ	İ	İ	İ	i
Vona	0-7	Sandy loam	•	A-2,		0	0	100		60-70		•	5-10
		Sandy loam	•	A-2,		0	0		90-100				NP-5
	16-25	Sandy loam	•	A-2,		0	0	100		60-70		•	NP-5
	25-60	Loamy sand	SC-SM, SM 	A-2, 	A-4	0 	0 	100 	90 <b>-</b> 100 	50 <b>-</b> 75 	15-40 	20-25	NP-5 
200:		İ	İ	i		i	İ	İ	İ	İ	İ	İ	i
Vona		Sandy loam	•	A-2,	A-4	0	0	100	100	60-70	30-40	25-30	5-10
		Sandy loam	:	A-2,		0	0		90-100	:		:	NP-5
	16-25	Sandy loam	•	A-2,		0	0	100	90-100	:		:	NP-5
	25-60	Loamy sand	SC-SM, SM 	A-2, 	A-4	0 	0 	100 	90 <b>-</b> 100 	50-75 	15-40 	20-25	NP-5 
Karval	0-5	Gravelly loamy	SC-SM, SW-SM,	A-1,	A-2	0-10	0-15	60-80	  55 <b>-</b> 75	30-55	10-20	20-25	NP-5
	- 40	sand.	SP-SM, SM										
	5-40	Gravelly coarse sand.	SW	A-1 		0-10 	0-15	60-80 	55 <b>-</b> 75 	25 <b>-</b> 40 	0-5 	20-25	NP-5
i	40-60	Sand	SC-SM, SM,	A-1		0-20	0-20	  85 <b>-</b> 100	80-100	35-70	5-15	20-25	NP-5
į		į	SP-SM, SW-SM	į		į	ĺ	į	į	į	į	į	į
Midway, moist	0-4	Clay loam	lcr lcr	  A-6		   0	   0	100	   100	 90-100	 70-80	 30-40	 10-20
		Clay loam	•	A-6,	A-7	0						30-45	
i	15-25	Weathered	i	i		i	i '	ı ˈ	<sup>'</sup>	ı ˈ	ı <sup>'</sup>	ı ˈ	
		bedrock.		į		į	ĺ	į	į	ĺ	į	į	į
201:			 	 			 	 	 	 	 	 	 
Vona	0-7	Sandy loam	SC, SC-SM	A-2,	A-4	0	0	100	100	60-70	30-40	25-30	5-10
	7-16	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
I		Sandy loam	•	A-2,	A-4	0	0			•		20-25	
	25-60	Loamy sand	SC-SM, SM	A-2,	A-4	0	0 	100 	90 <b>-</b> 100	50-75 	15-40 	20-25	NP-5 
Midway, moist	0-4	Clay loam	Cr	  A-6		0	0	100	100	  90 <b>-</b> 100	70-80	30-40	10-20
İ		Clay loam	CL	A-6,	A-7	0	0	95-100	95-100	90-100	70-95	30-45	10-20
I	15-25	Weathered   bedrock.	 	 			 	 	 	 	 		 
į		İ	İ	İ		į		İ	İ	İ	İ	İ	İ
202:   Vona	0-7	  Sandy loam	  sc.sc=sm	  A-2,	A-4	   0	   0	   100	   100	  60-70	  30-40	  25-30	   5-10
		Sandy loam	•	A-2,		0	l 0			•		20-25	
i		Sandy loam	•	A-2,		0	0			•		20-25	
i		Loamy sand	•	A-2,		0	0			•		20-25	
		İ		i í		i	I	İ	İ	İ	İ	İ	İ

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	USDA texture	Classif	icati	on	Frag	ments	:	rcentag sieve n	e passin umber	ng	  Liquid	   Plas-
and soil name	-	İ		I		>10	3-10	İ				limit	
		<u> </u>	Unified	_ A	ASHTO		inches	4	10	40	200	<u> </u>	index
	In	 	 	 		Pct	Pct 	l I	 	l I	 	Pct	 
202:		i	İ	İ		i	i	i	i	i	İ	i	i
Seldom	0-7	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	95-100	60-70	30-40	20-25	NP-5
I	7-15	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	95-100	60-70	30-40	20-25	NP-5
		Sandy loam	:	A-2,		0	0		•	60-70	•	•	NP-5
	42-60	Stratified   sandy loam to   sandy clay   loam.	•	A-4,     	A-2, A-6	0   	0     	100     	95-100     	60-95     	30-60     	20-40	NP-20     
203:		1	 	 				 	 		l i		 
Vonid	0-6	Loamy sand	l Isc-sm.sm	  A-2		I I 0	l l 0	   100	   100	  50-75	l   15-30	  20-25	  NP-5
		Sandy loam	•	A-2,	A-4	0	0			60-70		•	NP-5
i	34-52	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90 <b>-</b> 100	60-70	30-40	20-25	NP-5
	52-60	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	50-75	15-40	20-25	NP-5
204:		1	 	 				 	 	 	l i		
Vonid	0-6	Sandy loam	SC, SC-SM	  A-2,	A-4	0	0	1 100	1 100	  60-70	30-40	25-30	5-10
i	6-34	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90 <b>-</b> 100	60-70	30-40	20-25	NP-5
I	34-52	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
	52-60	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	50-75	15-40	20-25	NP-5
205:		1	l I	l I		I I	l I	 	 	l I	l I	 	l I
Vonid	0-6	Sandy loam	SC, SC-SM	A-2,	A-4	0	0	100	100	  60-70	30-40	25-30	5-10
i	6-34	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
1	34-52	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
	52-60	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	50-75	15-40	20-25	NP-5
206:		1	l I	l I		I I	l I	 	 	l I	l I	l I	l I
Vonid	0-6	Sandy loam	SC, SC-SM	A-2,	A-4	0	0	100	100	  60-70	30-40	25-30	5-10
i	6-34	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90 <b>-</b> 100	60-70	30-40	20-25	NP-5
1	34-52	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	60-70	30-40	20-25	NP-5
	52-60	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	90-100	50-75	15-40	20-25	NP-5
Karval	0-5	  Gravelly loamy   sand.	  SC-SM, SW-SM,   SP-SM, SM	  A-1, 	A-2	0-10	   0-15 	  60-80 	  55-75 	  30-55 	  10-20 	20-25	  NP-5 
j	5-40	Gravelly coarse	sw	A-1		0-10	0-15	60-80	55-75	25-40	0-5	20-25	NP-5
	40-60	sand.  Sand	  SC-SM, SM,   SW-SM, SP-SM	  A-1 		0-20	   0-20 	  85-100 	  80-100 	  35-70 	   5-15 	  20-25 	  NP-5 
i		i	 	i		i	i	i	i	i	İ	i	i
Midway	0-4	Clay loam	!	A-6		0	0	100	•	90-100		•	10-20
		Clay loam	CL	A-6,	A-7	0	0	95-100	95-100	90-100 	70-95 	30-45	10-20 
	15-25	Weathered   bedrock.	   	   		   	   	   	   	   	   	   	   
207:		I	I	I		I	I	I		I		I	
Vonid		Sandy loam		A-2,		0	0	100	•			25-30	:
		Sandy loam		A-2,		0	0		•	60-70		•	NP-5
		Sandy loam	•	A-2,  A-2,		0   0	0   0		•			20-25	
	32 00			2,				100					
Midway	0-4	Clay loam	CL	A-6		0	0	100	100	90 <b>-</b> 100	70-80	30-40	10-20
I		Clay loam	:	A-6,		0	0	95-100	95-100	90-100	70-95	30-45	:
	15-25	Weathered   bedrock.	 	 				 	   !	 	 		
208:		 	 	 			 	 	 	 	 	 	 
Vonid		Sandy loam	•	A-2,		0	0	100	•			25-30	
		Sandy loam	•	A-2,		0	0		•			20-25	
		Sandy loam	•	A-2,		0	0		•			20-25	
	52-6U	Sandy loam	SC-SM, SM	A-2,	A-4	0	0	100	130-T00	120-75	15-40	20-25	ב-מען

Table 17.--Engineering Index Properties--Continued

Map symbol	Depth	   USDA texture	Classif	ication	n	Fragi	ments	:	rcentage sieve n	e passin umber	ng	  Liquid	   Plas-
and soil name			l			>10	3-10	l				limit	ticity
		<u> </u>	Unified	AAs	SHTO	inches	inches	4	10	40	200		index
	In					Pct	Pct	!				Pct	
208:		 	 	 		l I	l I	 	l I	l I	l I		
Seldom	0-7	Sandy loam	SC-SM, SM	  A-2, 1	A-4	l I 0	l I 0	1 100	  95-100	  60-70	  30-40	20-25	  NP-5
į		Sandy loam	•	A-2, 2		0	0	•	•	60-70		•	NP-5
İ	15-42	Sandy loam	SC-SM, SM	A-2, A	A-4	0	0	100	95-100	60-70	30-40	20-25	NP-5
!	42-60	•	•	A-2, A	A-4, A-6	0	0	100	95-100	60-95	30-60	20-40	NP-20
		sandy loam to sandy clay loam.	SM     	     		     	     	     	     	     	     	     	     
209:		İ	İ	İ		İ	İ	İ	İ	İ	İ	İ	į
Wages		Loam	•	A-4		0	0	100	•	•		25-30	
		Loam	•	A-6		0	0	100	•	•		30-35	
l	12-17	Loam	SC, SC-SM	A-4		0 	0 	100	100 	1  80-T00	35-80 	25-30	5-10
	17-60	  Loam    	•	  A-2-4;   	, A-4	   0 	   0 	   100   	   100   	  60-95   	  30-75   	20-30	  NP-10   
210:		İ	İ	İ		İ	İ	İ	İ	İ	İ	İ	İ
Wages		Loam	•	A-4		0	0	•	•	80-95			5-10
	4-10	Loam	•	A-4, 1	A-6	0	0	95-100	90-100	75-95	35-75	25-35	5-15
	10-35	  Loam	CL, SC-SM	  A-2, 1	A-4, A-6	   0	   0	  95 <b>-1</b> 00	  80 <b>-</b> 100	  50-90	  30-80	  25-35	5-15
		[	SC, SC-SM			l	l	1	l	l	1	1	1
	35-60	Loam  	CL, CL-ML, SC-SM, SC	A-2, 1 	A-4	0 	0-5 	85 <b>-</b> 100 	80 <b>-</b> 100 	50 <b>-</b> 95 	25-75 	25-30	5-10
211:		 	 	 		l I	l I	 	l I	l I	I I		
Wages, dry	0-4	Loam	CL, CL-ML	A-4		0	0	100	  95-100	  80-95	  55-75	25-30	5-10
i	4-10	Loam	CL-ML, SC,	A-4, 2	A-6	0	0	95 <b>-1</b> 00	90 <b>-1</b> 00	75-95	35-75	25-35	5-15
		[	CL, SC-SM			l	l		l	l	l		
	10-35	Loam	•	A-2, 1	A-4, A-6	0	0	95-100	80-100	50-90	30-80	25-35	5-15
I	35-60	  Loam	SC, SC-SM	  A-2, 1	A-4	l I o	l   0-5	  85-100	  80=100	  50-95	  25=75	  25=30	5-10
ľ	33 00		SC-SM, SC										3 10
		!	!			<u> </u>	!	!	ļ	ļ	!	!	!
212:	0-4		lar ar w	  A-4		l I 0	l I 0	1 100	   05 100				
Wages		Loam	•	A-4, 1	A-6	0   0		100  95-100	•	80-95  75-95			5-10   5-15
ľ			SC, SC-SM	, -		İ	İ						3 23
į	10-35	Loam	CL-ML, CL,	A-2, A	A-6, A-4	0	0	95-100	80-100	50-90	30-80	25-35	5-15
!		!	SC, SC-SM	!		ļ	ļ	1	ļ .	ļ .	I		1
	35-60	Loam	CL, CL-ML, SC-SM, SC	A-2, 1 	A-4	0 	0-5 	85 <b>-</b> 100 	80 <b>-</b> 100 	50 <b>-</b> 95 	25 <b>-</b> 75 	25 <b>-</b> 30 	5-10
į		į	į	į		İ	į	į	į	į	į	į	į
Karval	0-5	Gravelly loamy   sand.	SC-SM, SW-SM,	A-1, A	A-2	0-10	0-15	60-80	55-75	30-55	10-20	20-25	NP-5
	5-40	Gravelly coarse	•	  A-1		   0-10	I   0−35	  60-80	I  55-75	  25-40	   0-5	  20-25	  NP-5
į		sand.	İ	i		j	j	į	į	į	İ	į	į
ļ	40-60	Sand	•	•	A-2-4,	0-20	0-35	85-100	80-100	35-70	5-15	20-25	NP-5
l I		 	SM, SW-SM	A-3 		l I	l I	I I	l I	l I	 		 
213:		İ		İ		İ	İ	i	i	i	i	i	i
Weld	0-4	Silt loam	ML	A-4		0	0	100	100	90-100	70-90	30-35	5-10
		Silty clay	•	A-7		0	0	100	•	•		45-50	'
ļ		Silty clay loam	•	A-4, A	A-7	0	0	100	•	•		30-50	
l I	44-60	Silt loam	l Iwr	A-4 		0 	0 	100 	100 	90-100 	/U-90 	30-35 	5-10 
214:		İ	İ	i		 	 	i				i	
Weld, dry	0-4	Silt loam	ML	A-4		0	0	100	100	90 <b>-1</b> 00	70-90	30-35	5-10
	4 10	Silty clay	l MI.	A-7		I 0	0	100	100	95-100	85-95	45-50	15-20
	4-19	122207 0247	1	1			•			•		•	
 	19-44	Silty clay loam  Silt loam	ML	A-4, A	A-7	0	0   0	100   100	•	•		30-50 30-35	

Table 17.--Engineering Index Properties--Continued

			Classi	fication	Frag	ments	Per	rcentag	e passi	ng		
Map symbol	Depth	USDA texture	l		_		1	sieve n	umber		Liquid	Plas-
and soil name					>10	3-10					limit	ticity
			Unified	AASHTO	inches	inches	4	10	40	200		index
	In	!		1	Pct	Pct		ļ			Pct	ļ
215:		l I	 	1		 		l I	 	 		l I
Wiley	0-4	Silt loam	ML	A-4	j 0	0	100	100	90-100	70-90	30-35	5-10
	4-23	Silty clay loam	CL, ML	A-4, A-6	j 0	0	100	100	90-100	70-95	30-40	5-15
	23-60	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
216:		l I	 	1		 	l	 	 	 		l I
Wiley	0-4	Silt loam	ML	A-4	j o	0	100	100	90-100	70-90	30-35	5-10
	4-23	Silty clay loam	CL, ML	A-4, A-6	j 0	0	100	100	90-100	70-95	30-40	5-15
į	23-60	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
217:		I I	 	l I	l I	 	 	 	 	 	 	 
Wilid	0-3	Silt loam	lmt.	  A-4	i o	0	100	1 100	90-100	  70-90	30-35	5-10
		Silty clay loam	1	A-4, A-6	1 0	1 0	100	1 100	90-100	•	•	5-15
į		Silt loam	•	A-4	0	0	100	100	90-100		•	5-10
218:		l I	 	1		 	l	 	 	 		l I
Water.		į	į	į	į	į		į	į	į	į	į
219:		 	 	 	l I	 	l	 	 	 		l I
Gravel pits	0-5	Extremely	GW	A-1	į	0-25	10-25	5-25	0-15	0-5	0-14	NP
		gravelly sand.			- !							
	5-60	Extremely   gravelly sand.	GW, GP, SP,   SW	A-1 		0-25 	10-55 	5-50 	0-15	0-5 	0-14	NP 
220:		1			I							
Access denied.		I I	I I	-	1			I I		1		
Access denied.					!			!	!	!	!	!

Table 18.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer.)

Map symbol	Depth	   Clay	Moist		  Available	•	Organic	•	on fact		erodi-	'
and soil name		 	bulk   density	bility (Ksat)	water  capacity	extensi-	matter	   K	   Kf		bility  group	
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
 101:			I									
Apishapa, rarely		 			l I	 					l I	l I
ponded	0-8	I 27-40 I	1 25-1 40	0.20-0.60	l   0 17=0 21	   3 0=5 9	10 5-2 0	l I 24	1 .24	5	I I 4т.	l   86
				0.06-0.20	•			•		5		
   102:		 	l I		 	 		 	 		 	 
Arvada	0-4			0.60-2.00			•		.20	2	4L	86
				0.06-0.60								
!				0.06-0.20		•		•				
	44-60	30 <b>-4</b> 5  	1.15-1.40	0.00-0.06	0.14-0.21 	3.0-5.9 	0.0-0.5	.28 	.28   		 	 
103:	0.4	1 12 201	1 35 1 50	2 00 6 00						_		
Ascalon			:	2.00-6.00	:	:		:	.24	5	3	86
!				0.60-2.00 0.60-6.00		•		•	.20     .37		 	 
i	15-60	15-20	1.25-1.50	0.60-6.00	0.13-0.17	0.0-2.9		.37	.3/		 	 
104:	0.4		1 35 1 50	2 00 6 00	 					_		
Ascalon	0-4			2.00-6.00 0.60-2.00	•		•	•	.24	5	3	86
¦				0.60-6.00	•				.20     .37		l I	I I
i	15 00	13 20		0.00 0.00				.37	•••			
L05:   Ascalon	0-4		1 25_1 50	2.00-6.00	  0 10-0 12	0 0-2 0	11 0-2 0			5	   3	   86
ASCATOII				0.60-2.00		•		•	20	5	ı J	00 
i				0.60-6.00	•			•	37			
   L06:		 	I		 	 		 			 	 
Ascalon, dry	0-4	   12-20	1.35-1.50	2.00-6.00	  0.10-0.12	0.0-2.9	1.0-2.0	.24	.24	5	l I 3	l 86
	4-15			0.60-2.00	•		•	•	.20	-		
į	15-60	: :	:	0.60-6.00	:	:	:	:	.37		į	į
l 107:		 	 		 	 	 	 	 		 	 
Ascalon, dry	0-4	12-20	1.35-1.50	2.00-6.00	0.10-0.12	0.0-2.9	1.0-2.0	.24	.24	5	3	86
I	4-15	20-30	1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	0.5-1.0	.20	.20			
l	15-60	15-20  	1.25-1.50	0.60-6.00	0.13-0.17 	0.0-2.9	0.0-0.5	.37 	37		 	 
108:		į į	į			į	į	į	į į		į	į
Ascalon, dry				2.00-6.00	•			•	.24	5	3	86
ļ				0.60-2.00		•			.20			!
 	15-60	15-20  	1.25-1.50	0.60-6.00	0.13-0.17 	0.0-2.9		.37	.37   		 	 
109:     Ascalon	0-4		1 25 1 50	2 00 6 00						5	   3	   86
				2.00-6.00 0.60-2.00		•	'			5	3 	00 
i				0.60-6.00	•		•				! 	
Haxtun	0-4	   3-10	1.45-1.60	6.00-19.99	  0.06=0.08	   0.0=2.9	11.0-4.0	   .17	  -17	5	   2	   134
i				2.00-6.00	•		•	•			i	i
į	17-44	25-35	1.25-1.40	0.20-2.00	0.14-0.21	0.0-2.9	0.5-1.0	.24	.24		į	İ
İ	44-60	12-25	1.25-1.50	0.20-0.60	0.10-0.18	0.0-2.9	0.0-0.5	.43	.43		ĺ	ĺ
   110:		ı   	 		! 	! 			ı   		! 	! 
Ascalon, dry					•		•			5	3	86
I				0.60-2.00	•		•				ļ	!
 	15-60	15-20  	1.25-1.50	0.60-6.00	0.13-0.17 	0.0-2.9	0.0-0.5	.37 	.37		 	 
Haxtun, dry				6.00-19.99	•		•			5	2	134
ļ				2.00-6.00	•		•				!	
				0.20-2.00	•		•	•			l	
	44-60	ı 12-25	1.25-1.50l	0.20-0.60	10.10-0.18	1 0.0-2.9	10.0-0.5	. 43	ı .43 l		i	1

Table 18.--Physical Properties of the Soils--Continued

Map symbol	Depth	   Clay	Moist		  Available   water	:	Organic		on fact		erodi-	Wind  erodi-
and soil name			bulk	bility	:	extensi-	matter		77.6	•	bility  group	
	In	l   Pct	density g/cc	(Ksat) In/hr	capacity In/in	bility   Pct	Pct	K I	Kf 	l T I	group 	index 
			3, 22		,			İ	İ		i	İ
111:		I			!	!			!			
Bacid	0-4			0.60-2.00	•	•	•		.37	5	6	48
	4-11			0.06-0.60	•	•	•			!		!
	11-21 21-60			0.06-0.60 0.20-0.60	•	•	•			 		 
	21-60	20-35 	1.15-1.30   	0.20-0.60	0.15 <b>-</b> 0.21 	3.0-3.9		•43 	•43	l İ	l I	 
112:		İ	i i		İ	İ	i	İ	i	İ	i	i
Bankard,												
occasionally										l		
flooded	0-5			6.00-19.99	•	•	•		.20	5	2	134
	5-60	1-10	1.35-1.45	6.00-19.99	0.05-0.07	0.0-2.9	0.0-0.5	.20	.20			
Glenberg,	 	l I	 		l I	l I	I I	l I	I I	l I	l I	l I
occasionally		! 			! 	! 	i	 	i	<u>'</u>	İ	i
flooded	0-3	10-18	  1.35-1.50	2.00-6.00	0.13-0.15	0.0-2.9	0.5-2.0	.28	.28	   4	3	86
	3-32			2.00-6.00	•	•	•	•	.32	i	i	i
	32-60	1-8	1.45-1.60	6.00-19.99	0.05-0.07	0.0-2.9	0.0-0.5	.24	.24	İ	į	i
		l										
113:										l		
Bijou	0-4	'		6.00-19.99	•	•	'		.20	4	2	134
	4-9			6.00-19.99	•	•	•		.20	ļ		
	9-36 36-60			2.00-6.00	•	•	•		.28	 		
	36-60	4-10	1.45 <b>-</b> 1.60  	6.00-19.99	0.05-0.08 	0.0-2.9 	10.0-0.5	•20 	1 .20	l I	l I	
114:		! 	 		! 	! 	i	 	i	 	i i	i
Bijou, moist	0-4	4-10	  1.45-1.60	6.00-19.99	0.06-0.08	0.0-2.9	0.5-2.0	.20	.20	'   4	2	134
	4-9	4-10	1.45-1.60	6.00-19.99	0.06-0.08	0.0-2.9	0.5-1.0	.20	.20	i	į	i
	9-36	12-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28	l		
	36-60	4-10	1.45-1.60	6.00-19.99	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20			
									ļ			!
115:	0.4	4 10		6 00 10 00								
Bijou, moist	0-4 4-9			6.00-19.99 6.00-19.99	•	•	•		.20   .20	<del>1</del> 	2	134
	9-36			2.00-6.00	•	•	•		.28	l I	I I	l I
	36-60			6.00-19.99	•	•	•		.20	i	İ	i
		i				İ			i	İ	i	i
116:		ĺ	İ		ĺ	ĺ	İ		l	ĺ	ĺ	ĺ
Blakeland	0-12	3-8	1.45-1.60	6.00-19.99	0.06-0.08	0.0-2.9	1.0-2.0	.17	.17	5	2	134
	12-60	2-5	1.45-1.60	6.00-19.99	0.05-0.08	0.0-2.9	0.0-0.5	.24	.24			
117.			 		 	l i		 				
117: Bresser	0-3	l I 8-20	  1 35=1 45	2.00-6.00	l   0 10=0 13	l l n n=2 9	1 0-2 0	l I 24	.24	   3	l   3	l   86
DICBBCI	3-13	'		0.60-2.00	•	•	'			1	1	1
	13-60			6.00-19.99	•	•	•	•		İ	i	i
	į	İ	j i		İ	İ	į	İ	į	i	į	į
118:		I								l		
Campo				0.60-6.00	•	•	•	•		5	6	56
	'			0.20-0.60	•	•	•	•		!		
	15-60	20-35	1.15-1.30	0.20-0.60	0.15-0.19	0.0-2.9	0.0-0.5	.37	.37			!
119:	 	I I	 		l I	l I	I	l I	I I	l I	I I	I I
Canyon	0-3	1 12-20	  1.25-1.40	2.00-6.00	  0.10-0.13	l 0.0-2.9	0.5-1.0	l   .20	1 .37	l I 2	   4L	l 86
	3-10			0.20-0.60	•	•	•	•		 	i	
	10-14			0.20-0.60			j			İ	į	İ
		I	l İ		l	l						
Rock outcrop	0-60			0.20-0.60						-	8	0
		ļ .			<u> </u>	ļ	ļ		ļ		ļ	
120:												
Colby				0.60-6.00	•	•	•	•		5	4L	86
	5-60	18-27	1.15-1.30	0.60-2.00	10.15-0.20	0.0-2.9	10.0-0.5	.49	.49	I	I	I

Table 18.--Physical Properties of the Soils--Continued

Map symbol	Depth	   Clay	   Moist	:	  Available		Organic		on fact	cors	erodi-	
and soil name			bulk	bility	:	:	matter	l		! -	bility	
	<b>-</b>	l 5-t	density	(Ksat)	capacity	bility	D=t	K	Kf	T	group	index
	In	Pct 	g/cc 	In/hr	In/in 	Pct 	Pct	l I	 	l I	l I	 
121:		i	! 	i	i	İ	i				i	i
Colby	0-5	15-27	1.15-1.30	0.60-6.00	0.15-0.20	0.0-2.9	0.5-2.0	.43	.43	5	4L	86
	5-60	18-27	1.15-1.30	0.60-2.00	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49		I	I
				I								I
122:												
Colby	0-5 5-60	•		0.60-6.00	•				.43   .49	5 	4L 	86 
	3-60	10-27 	1.15-1.50 	0.60-2.00	0.15-0.20 	0.0-2.9	10.0-0.5	•= <i>3</i> 	•=>	l I	I I	I I
Weld	0-4	19-25	  1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	4-19	35-45	1.15-1.30	0.20-0.60	0.14-0.21	3.0-5.9	0.5-2.0	.24	.24	i	İ	İ
	19-44	28-39	1.15-1.30	0.20-0.60	0.17-0.21	0.0-2.9	0.5-2.0	.32	.32	l	I	I
	44-60	16-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49	l		
					ļ	!	!		!	!	!	!
123: Firstview	0-4	 	  1 45 1 60	2.00-6.00	   0 0 0 0 0 0		10 5 2 0	20	   .20	   2	   2	   134
riiscview		•		0.20-2.00	•				.28	<del>^</del> 	<u>~</u> 	1 134
		•		0.06-0.20	•					i	i	i
	35-60	•		0.20-0.60	•					i	i	i
İ	İ	İ	j	İ	İ	İ	į	İ	İ	İ	İ	İ
124:				I					I	l	I	I
Fort Collins			•	0.60-6.00	•			•	.28	5	5	56
		•		0.60-2.00							!	!
				0.20-2.00	•	•	'					
	30-60	12-25	1.25-1.30 	0.60-6.00	0.14-0.20	0.0-2.9	10.0-0.5	•43 	.43	 	 	 
125:	 	l I	l I	l I	l I	I I		l I	i i	l I	I I	I I
Fort Collins	0-7	12-22	  1.25-1.40	0.60-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	'   5	,   5	   56
	7-13	28-35	1.25-1.40	0.60-2.00	0.17-0.21	0.0-2.9	0.5-1.0	.24	.24	i	İ	İ
	13-30	18-35	1.25-1.40	0.20-2.00	0.14-0.21	0.0-2.9	0.5-1.0	.37	.37			
1	30-60	12-25	1.25-1.30	0.60-6.00	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43	l		
									!	ļ		
126: Fort Collins	0-7	   12_22	  1 25_1 40	0.60-6.00	 	   0 0-2 0	11 0-2 0	   20	   20	l I 5	l l 5	l   56
Fort Collins	7-13	•		0.60-2.00	•					l ə	l a	36 
		•		0.20-2.00	•					! 	İ	i I
	30-60	12-25	1.25-1.30	0.60-6.00	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43	i	İ	İ
İ		ĺ	ĺ	ĺ	ĺ	ĺ	İ		Ī	ĺ	ĺ	ĺ
Karval	0-5	•		6.00-19.99	•				.20	5	2	134
	5-40	•		19.99-99.62	•				.10	!	!	!
	40-60	3-10	1.45-1.60	19.99-99.62	0.03-0.07	0.0-2.9	0.0-0.5	.20	.20			
127:		l I	l İ	I I	l I	l I	I	l I	 	l I	l I	l I
Fort Collins	0-7	12-22	  1.25-1.40	0.60-6.00	  0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	   5	   5	l   56
	7-13		•	0.60-2.00	•		0.5-1.0	.24	.24	i	i	i
	13-30	18-35	1.25-1.40	0.20-2.00	0.14-0.21	0.0-2.9	0.5-1.0	.37	.37	l	I	I
1	30-60	12-25	1.25-1.30	0.60-6.00	0.14-0.20	0.0-2.9	0.0-0.5	.43	.43	l		
Platner				0.20-0.60	•			•		3	6	48
			•	0.20-0.60	•		•	•			 	l I
	'		•	0.20-0.60	•			•		•	İ	i I
										İ	i	i
128:		I		I			1				I	
Fort Collins			•	0.60-6.00	•			•		5	5	56
		•		0.60-2.00	•					•	ļ .	
			•	0.20-2.00	•		•	•			I	
	30-60	12-25 	1.25-1.30	0.60-6.00	U.14-U.20	U.U-2.9	10.0-0.5	.43 	•43 	 	I I	 
Razor, moist	0-2	l   28-40	I   1.25-1.40	0.60-2.00	  0.17-0.21	I   3.0-5.9	11.0-2.0	l   .20	I   .20	   3	   4L	l   86
,				0.06-0.60	•			•		, -	i	
				0.00-0.06						İ	İ	İ
İ	27-37			0.00-0.00		i			ļ		I	I
		I	I	1	1	I			I	l	1	I

Table 18.--Physical Properties of the Soils--Continued

Map symbol	Depth	Clay	Moist	Permea-	Available	Linear	Organic		on fact		erodi-	Wind  erodi
and soil name		İ	bulk	bility	water	extensi-	matter	İ			bility	  bilit
			density	(Ksat)	capacity	bility		K	Kf	Т	group	index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
129:		 	 	 	 	 	 	 	 	 	 	 
Fort	0-2	12-22	1.25 <b>-</b> 1.40	0.60-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
	2-5	10-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28			
				0.60-2.00		•					!	
	34-60	25-38	1.15 <b>-</b> 1.40	0.20-0.60 	0.14-0.21 	3.0-5.9	0.0-0.5	.37 	.37 	 	 	 
130:		 	 	 	! 	! 		 	! 		 	<u> </u>
Fort	0-2	12-22	1.25-1.40	0.60-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
		'	•	2.00-6.00		•	'					
				0.60-2.00		•						
	34-60	25-38	1.15 <b>-</b> 1.40	0.20-0.60 	0.14-0.21 	3.0-5.9	0.0-0.5	.37 	.37 	 	 	 
131:		 	 	 	 	! 	 	 	 	 	 	 
Fort	0-2	12-22	1.25-1.40	0.60-6.00	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
İ	2-5	10-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28	ĺ	ĺ	ĺ
	5-34	25-40	1.25-1.40	0.60-2.00	0.14-0.21	3.0-5.9	0.5-1.0	.32	.32			
	34-60	25-38	1.15-1.40	0.20-0.60	0.14-0.21	3.0-5.9	0.0-0.5	.37	.37		ļ	
Karval	0-5	   3-12	  1.45-1.60	   6.00-19.99	  0.04-0.06	l   0.0-2.9	10.5-2.0	l   .10	   .20	l l 5	   2	l l 134
	5-40	'	•	19.99-99.62		•	'			i	i	i
	40-60	3-10	1.45 <b>-</b> 1.60	19.99-99.62	0.03-0.07	0.0-2.9	0.0-0.5	.20	.20	İ	İ	İ
				l			ļ				!	
132: Fort	0-2	   12_22	  1 25_1 40	   0.60-6.00	 	   0 0-2 0	11 0-2 0	   20	   .28	  -	l l 5	l I 56
FOIC				2.00-6.00	•	•		•		ا	1 2	36 
		'	•	0.60-2.00		•	'			i	i	i
	34-60	25-38	1.15 <b>-</b> 1.40	0.20-0.60	0.14-0.21	3.0-5.9	0.0-0.5	.37	.37	İ	İ	İ
_												
Razor	0-2			0.60-2.00		•			.20	3	4L	86
				0.06-0.60 0.00-0.06		•				l I	 	 
	27-37			0.00-0.00						! 	i I	! 
İ		İ	İ	İ	İ	İ	İ	İ	İ	İ	İ	İ
133:				l			ļ					
Haversid, rarely	0 14	15 05	  1 15 1 20									
flooded				0.20-0.60		•			37	5 	4L 	86 
	11 00	20 33		0.20 0.00 		0.0 2.5		•37 	•37		i	<u> </u>
134:		Ī				ĺ	ĺ	ĺ	ĺ		Ī	ĺ
Haverson, rarely												
flooded				0.60-2.00	•	•		•	.37	5 	4L	86
		'	•	0.20-0.60		•	'		.37   .28	l I	! 	 
		İ				İ	i		İ	İ	i	i
135:		I		l							I	
Haxtun	0-4			6.00-19.99	•	•		•		5	2	134
				2.00-6.00	•	•		•				
				0.20-2.00		•				l I	l I	l I
		į				İ	i		İ	İ	i	i
136:		I		l							I	
Haxtun, dry		'	•	6.00-19.99		•	'			5	2	134
				2.00-6.00	•	•		•		 	I	 
				0.20-2.00		•				l I	I I	I I
	00	, <u></u>										<u>.</u>
137:			l	l	l	l			l			I
Haxtun, dry				6.00-19.99		•				5	2	134
				2.00-6.00		•					ļ.	
				0.20-2.00	•	•		•		l I	I	 
	44-00	1 14-43	1 T - C - T - D U	1 0.20-0.00		1 0.0-4.9	10.0-0.5		1 . 23	1		i .

Table 18.--Physical Properties of the Soils--Continued

Map symbol	Depth	   Clay	Moist		  Available	•	Organic	:	on fact	ors	erodi-	Wind  erodi-
and soil name		!	bulk	bility	:	extensi-	matter	!			bility	
		L	density		capacity		<u> </u>	K	Kf	T	group	index
	In	Pct 	g/cc   	In/hr	In/in 	Pct 	Pct	l I	l I	l	l I	l
137:		i			! 	i I	i		i		i	i
Olney	0-7	3-10	1.45-1.60	2.00-6.00	0.06-0.08	0.0-2.9	0.5-2.0	.20	.20	5	2	134
	7-36	20-35	1.25-1.40	0.20-2.00	0.14-0.18	0.0-2.9	0.5-1.0	.20	.20		I	
				2.00-6.00		•	•	•				
	46-60	5-25	1.25-1.60	6.00-19.99	0.05-0.16	0.0-2.9	0.0-0.5	.24	.24	l		
138:		l I	 		l İ	l I	1	l I	 	 	l I	1
Haxtun	0-4	3-10	  1.45-1.60	6.00-19.99	  0.06-0.08	0.0-2.9	1.0-4.0	.17	.17	5	2	134
j	4-17	10-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	1.0-2.0	.24	.24		İ	į
				0.20-2.00		•	•	•				
	44-60	12-25	1.25-1.50	0.20-0.60	0.10-0.18	0.0-2.9	0.0-0.5	.43	.43		!	ļ
Olnest	0.0	210		6.00-19.99	   0 0 0 0 0 0		10 5 2 0				   2	   134
Olnest				0.60-2.00		•	•	•	.20   .28	3	<del>4</del> 	1 134
				0.60-6.00	•		•	•			i	i
		İ	i i		İ	İ	į	İ	i	ĺ	İ	į
139:								l	l			
Keith		:	: :	0.60-2.00	:	:	:	:	.37	5	5	56
				0.20-2.00		•	•	•				
	26-60	15-25 	1.15-1.30	0.20-0.60	0.15-0.20 	0.0-2.9	10.0-0.5	•49 	.49 	l I	l I	1
140:		! 	 		 	! 	i	! !	¦		! !	i
Keith	0-10	15-25	1.15-1.30	0.60-2.00	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	,   5	56
İ	10-26	26-35	1.15-1.30	0.20-2.00	0.15-0.21	0.0-2.9	0.5-2.0	.32	.32		ĺ	ĺ
	26-60	15-25	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49			
								!	!		ļ	
141: Kim	0-4	   15_27	  1 25_1 40	0.60-2.00	 	   0 0-2 9	10 5-2 0	   37	   .37		   41.	   86
KIM				0.20-0.60		•	•	•		]	411	1
				0.20-0.60	•		•	•			i	i
		i	i i		İ	İ	i	İ	i		i	i
142:												
Kim	0-4	:	: :	0.60-2.00	:	:	:	:	.37	5	4L	86
				0.20-0.60 0.20-0.60	•			•				
	30-00	12-32	1.25-1.50  	0.20-0.60	0.03-0.13 	0.0-2.9	1	•32 	•32 		! !	i
143:		i	i i			İ	i	İ	i		i	i
Kimst	0-5	21-27	1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	0.5-2.0	.37	.37	5	4L	86
	5-60	20-35	1.25-1.40	0.20-0.60	0.14-0.21	0.0-2.9	0.0-0.5	.28	.28			
		!					!		!		!	ļ
144: Kimst	0-5	21 27		0 60 2 00	 		10 5 2 0	27	   .37	5	   4L	   86
KIMSC	5-60			0.60-2.00 0.20-0.60	•		•	•	.28	3	   4T	00 
								i	i		i	i
145:		İ	j i		j	į	į	į	į	ĺ	İ	į
Las Animas,								l	l			
occasionally												
flooded	0-6 6-10			2.00-6.00 2.00-19.99	•	•		•	.28	3	3	86
	10-60	'		2.00-19.99		•	•	•		 	I I	l I
	10 00	0 10		2.00 13.33				.20	.20		İ	i
146:		i	i i		İ	İ	i	İ	i		i	i
Limon, rarely		ĺ	İ			ĺ	İ	ĺ	I		ĺ	l
flooded				0.06-0.20	•		•	•		5	4	86
	6-60	35-60	1.15-1.30	0.00-0.20	0.14-0.20	6.0-8.9	0.0-0.5	.32	.32			!
147:		[ [	 		 	[ [	1	l I	l I	l I	I I	l I
Limon, moist,		<u> </u>	 		! 	İ	1	i I	! 		<u> </u>	
rarely flooded-	0-6	40-60	1.15-1.30	0.06-0.20	0.14-0.16	6.0-8.9	0.5-2.0	.17	.17	5	4	86
				0.00-0.20	•		•	•			İ	Ì
İ		I	ļ İ				[				I	
148:												
Manzanola	0-5			0.20-0.60	•		•	.24		5	4L	86
	E- 20	2 4	11 15 1 20	0 06.0 60	10 14 0 00	1 2 0 5 0	10 5 1 0	2.0	2.0		1	1
				0.06-0.60 0.20-0.60		•	•	•		l	 	 

Table 18.--Physical Properties of the Soils--Continued

		I			1		1	Erosi	on fact	ors	Wind	Wind
Map symbol	Depth	Clay	Moist	Permea-	Available	Linear	Organic	l			erodi-	erodi-
and soil name			bulk	bility	water	extensi-	matter	l	l		bility	bility
			density	(Ksat)	capacity	bility		K	Kf	Т	group	index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct				l	ļ
149:						 						
Manzanst, rarely	l I	 			 	l I	 	l I	l I	l I	l I	l I
flooded		l 27-35	  1.25-1.40	0.60-2.00	0.17-0.21	l 3.0-5.9	11.0-2.0	l   .20	.20	l I 5	I I 4ъ	l 86
	3-37	•		0.06-0.60	•	•				i ~	i	
j	37-60	30-45	  1.15-1.40	0.00-0.06	0.14-0.21	3.0-5.9	0.0-0.5	.28	.28	İ	İ	İ
								l	l	l		
150:									l	l		
Manzanst				0.60-2.00	•	•		•	.20	5	4L	86
		•		0.20-0.60	•	•						
				0.06-0.60 0.00-0.06	•	•		•		l I	l I	l I
	40-60 	30-45		0.00-0.00	0.14-0.21	3.0-3.9 	10.0-0.5	•24 	•24 	l I	I I	l I
151:		i I			i	! 	i	i I	i	İ	! 	i I
Midway	0-4	30-40	  1.25-1.40	0.06-0.20	0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	4L	86
İ	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24	ĺ	ĺ	ĺ
	15-25			0.00-0.00								
					!	ļ	ļ.				ļ	!
152:				0.00.00								
Midway, moist	0-4   4-15	•		0.06-0.20	•	•			.24	2	4L	86
	4-15   15-25	35-45	1.15-1.40  	0.00-0.20	0.14-0.21	3.0-5.9	1	.24	.24	l I	l I	l I
	13-23 			0.00-0.00	I	 			 	l I	l I	! !
153:		i I			i	! 	i	i I	i	İ	! 	i I
Midway	0-4	30-40	1.25-1.40	0.06-0.20	0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	4L	86
İ	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24	İ	İ	İ
	15-25			0.00-0.00								
									l	l		
Razor		•		0.60-2.00	•	•			.20	3	4L	86
		•		0.06-0.60	•	•						
	21-27	35-60	1.15-1.30  	0.00-0.06	10.13-0.16	6.0-8.9	1		.28 	l I	l I	l I
	<u>2</u> 7-37 	 	 	0.00-0.00	 	 		 	i		! !	! 
154:		i	i i		i	İ	i	i	i	i	i	i
Midway, moist	0-4	30-40	  1.25-1.40	0.06-0.20	0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	4L	86
	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24			
	15-25			0.00-0.00								
Razor, moist	0-2   2-21	•		0.60-2.00	•	•			.20 .24	3	4L	86
	2-21   21-27			0.06-0.60 0.00-0.06	•	•				l I	l I	l I
	27-37			0.00-0.00		0.0-0.5 		.20 	.20 		! !	! 
		i	i i		i	İ	i	i	i	i	i	i
155:		ĺ	i i		İ	İ	İ		İ	ĺ	İ	ĺ
Midway						•	•	•		2	4L	86
		•		0.00-0.20	•	3.0-5.9	0.0-0.5		:		ļ .	ļ
	15-25			0.00-0.00							l	l
Rock outcrop	l 0.60	   0-0	 	0.00-0.20	10 00 0 00	 	1	  -	  -		   8	   0
ROCK OUTCOP	0-60 	U-U	 	0.00-0.20	10.00-0.00	 		 	 	- 	° 	U
156:	! 		i i		i	! 	<u> </u>	i i	i	l I	! 	! 
Midway, moist	0-4	30-40	  1.25-1.40	0.06-0.20	0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	   4L	l 86
	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24	İ	İ	i
İ	15-25			0.00-0.00						ĺ	ĺ	ĺ
					1						l	l
Rock outcrop,		<u> </u>				ļ	ļ.				ļ	!
moist	0-60	0-0		0.00-0.20	10.00-0.00					-	8	0
157:	l I	l I			I	 	1	l I	l I	l	l I	l I
Nunn	l l 0-5	   28-35	ı  1.25=1.40	0.60-2.00	  0.17=0 21	I   0.0=2 0	11.0-3 0	l   .20	l   .20	l l 5	l I 6	l   48
				0.20-0.60	•	•		•			İ	, 10 
				0.20-6.00		•	•	•		İ	İ	İ
		ı	ı i		I	I	1	l	I	l	I	I

Table 18.--Physical Properties of the Soils--Continued

Man combal	Depth	   Clay	   Moist	   Permea-	   Arrailable	   Linos-	:	Erosio	on fact	ors	•	Wind  erodi
Map symbol	Depth	Clay			Available	:	Organic					
and soil name		l I	bulk   density	bility   (Ksat)	water  capacity	extensi-   bility	matter	l k	   K£	 	bility  group	
	In	l Pct	g/cc	In/hr	In/in	Pct	Pct	 	l KI		 	I
j		İ			İ	İ	i	İ	İ	İ	i	į
158:												
Nunn	0-5	•		0.60-2.00	•	•	•		.20	5	6	48
	5-19 19-60	•		0.20-0.60	•	•	•		.20   .32			
	19-60	15-30 	1.25 <b>-</b> 1.50  	0.20-6.00 	0.10-0.21 	0.0-2.9	U.U-U.5	•32 	•32 		l I	 
Sampson, rarely		İ	i		İ	İ	i	İ	İ	İ	i	į
flooded		•		0.60-2.00	•	•	•		.28	5	6	48
	7-36	•		0.20-2.00	•	•	•		.24			!
	36-60	15-30 	1.25-1.40	0.20-0.60	0.14-0.21 	0.0-2.9	0.0-1.0	.28 	.28 	l		l i
159:		! 			! 	! 	i	 	! 		İ	
Nunn, dry	0-5	28-35	1.25-1.40	0.20-2.00	0.17-0.21	0.0-2.9	1.0-3.0	.20	.20	5	6	48
İ	5-19	35-50	1.15-1.40	0.20-0.60	0.14-0.21	3.0-5.9	0.5-2.0	.20	.20		ĺ	İ
	19-60	15-30	1.25-1.50	0.20-6.00	0.10-0.21	0.0-2.9	0.0-0.5	.32	.32		l	
Sampson, dry,		l I	 		 	 		 	 	l I	 	 
rarely flooded-	0-7	1 15-27	1.25-1.40	0.60-2.00	  0.14-0.18	0.0-2.9	1.0-4.0	.28	.28	5	6	1 48
		•		0.20-2.00	•	•	•	•			i	i
j	36-60	15-30	1.25-1.40	0.20-0.60	0.14-0.21	0.0-2.9	0.0-1.0	.28	.28	ĺ	į	İ
160:	0.0	210		   6 00 10 00			10 5 2 0	20			   2	1 124
Oinest		•		6.00-19.99   0.60-2.00	•	•	•	•	.20   .28	) 5	<u>4</u> 	134
	38-60	:		0.60-6.00		:	:		32	 	İ	İ
İ		İ	İ		İ	İ	İ	İ	İ	ĺ	İ	İ
161:		ļ			!	ļ	[		!			!
Olnest		•		2.00-6.00	•	•	•		.28	5	3	86
	8-38	•		0.60-2.00	•	•	•		.28	 		
	38-60	12-25 	1.25 <b>-</b> 1.50  	0.60-6.00 	0.10-0.18 	0.0-2.9 	10.0-0.5	•32 	.32 	 	l I	l I
162:		İ			İ	İ	i	İ	İ		i	İ
Olnest	0-8	12-17	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	8-38	18-32	1.25-1.50	0.60-2.00	0.10-0.18	0.0-2.9	0.5-1.0	.28	.28			
	38-60	12-25	1.25-1.50	0.60-6.00	0.10-0.18	0.0-2.9	0.0-0.5	.32	.32			
163:		l I	 		l I	l I	 	l I	 		 	
Olnest	0-8	   12-17	1.35-1.50	2.00-6.00	  0.10-0.13	l 0.0-2.9	10.5-2.0	l   .28	.28	5	l l 3	l 86
		•		0.60-2.00	•	•	•	•	.28		i	i
İ	38-60	12-25	1.25-1.50	0.60-6.00	0.10-0.18	0.0-2.9	0.0-0.5	.32	.32	ĺ	İ	İ
		!			<u> </u>	ļ					ļ	
164: Olney	0-7	   2_10	  1 45_1 60	   2 00_6 00	 	   0 0-2 0	10 5-2 0	   .20	20		   2	134
Officey	0-7 7-36	•		2.00-6.00 0.20-2.00	•	•	•		.20   .20	) 	<del>'</del>	1 134
		•		2.00-6.00	•	•	•	•		 	i	i
		•		6.00-19.99	•	•	•	•			i	İ
İ		ĺ	ĺ		ĺ	ĺ	İ	l	ĺ		I	Ì
165:										_		
Olney		•		2.00-6.00	•	•	•	•	.28	5	3	86
	4-18	•		0.20-2.00		•						
	31-60	•	•	6.00-19.99	•	•		•		 	l I	l I
											i	İ
166:			l i		I	l	1		l			
Olney		•		2.00-6.00	•	•		•		5	3	86
		•		0.20-2.00		•					I	
		•	•	2.00-6.00 6.00-19.99	•	•		•		 	I I	l I
	31-00	3-45	  25 <b>-</b> 1-60	0.00 <b>-</b> 13.33		0.0-2.9		•4* 	•4 <del>*</del> 		! 	
167:		İ	j		i İ	İ	i	İ	i	İ	i	i
Olney	0-4	6-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-2.0	.28	.28	5	3	86
I		•		0.20-2.00	•	•		•				
	18-31	10-25	1.25-1.50	2.00-6.00	0.09-0.16	0.0-2.9	0.5-1.0	.28	.28			
	31-60			6.00-19.99			1	1 6 -	1 6 -		i	1

Table 18.--Physical Properties of the Soils--Continued

		1					1	Proc	on for		Wind	lwi
Map symbol	Depth	   Clay	   Moist	Permea-	  Available	l   Linear	  Organic		on ract	LOTS	Wind  erodi-	
and soil name	Depth	Clay	bulk	bility	•	extensi-			ı		bility	
and soll name	 	 	density	_	capacity	:	I	l K	   Kf		group	
	In	l Pct	g/cc	In/hr	In/in	Pct	Pct	l ===	1		l I	I
		l FCC	g/cc   	111/111	111/111	FCC	100	l I	<u> </u>	i i	l I	 
168:					İ	! 		İ	i	! 	! 	! 
Olney	0-4	l 6-20	  1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-2.0	.28	.28	' I 5	'   3	l 86
•	4-18	•		0.20-2.00	•	•				i	i	i
	18-31	•		2.00-6.00	•	•				i	i	i
	31-60	5-25	1.25-1.60	6.00-19.99	0.05-0.16	0.0-2.9	0.0-0.5	.24	.24	İ	İ	İ
		ĺ	İ		ĺ	ĺ	İ	ĺ	ĺ	ĺ	ĺ	ĺ
Midway	0-4	30-40	1.25-1.40	0.06-0.20	0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	4L	86
	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24			
	15-25			0.00-0.00								
					I	l		l	l			
169:					!		!		!	!		!
Otero				2.00-6.00		•		•	.28	5	3	86
	13-60	5-18	1.35-1.60	2.00-19.99	0.06-0.13	0.0-2.9	0.0-0.5	.28	.28	!	!	!
1.00						l	!		!		!	!
170: Oterodry	0 11	   F10		2.00-6.00	 		10 5 2 0	l I ao	   20	  -	 	   06
Oteroary	11-60	•		2.00-6.00		•			.28   .28	5 	3	86
	11-60	   2-T0	1.35-1.50	2.00-6.00	10.10-0.15	0.0-2.9 	10.0-1.0	•20 	•20 	l I	l I	l I
171:		 			I I	l I		l I	! !	l I	l I	I I
Oterodry	0-11	l I 5–18	  1.35=1.50	2.00-6.00	I  0.13=0.15	l   0.0-2.9	10.5-2.0	l I .28	.28	l I5	l I 3	l I 86
00020027	11-60			2.00-6.00		•			.28	-	1	1
	== 00	5 25						120 	1	i	i I	i I
172:		i	i		i	i	i	i	i	i	i	i
Platner	0-7	16-25	1.25-1.40	0.20-0.60	0.14-0.18	0.0-2.9	1.0-3.0	.28	.28	3	6	48
	7-15	35-50	1.15-1.40	0.20-0.60	0.13-0.19	3.0-5.9	0.5-2.0	.17	.17	i	i	i
	15-40	30-40	1.15-1.40	0.20-0.60	0.16-0.19	3.0-5.9	0.5-2.0	.24	.24	İ	İ	İ
	40-60	20-30	1.25-1.40	0.20-0.60	0.13-0.19	0.0-2.9	0.0-0.5	.28	.28			
					[				l			
173:					I	l						
Platner				0.20-0.60		•		•	.28	3	6	48
		•		0.20-0.60	•	•				!	!	!
		•		0.20-0.60	•	•				!	!	!
	40-60	20-30	1.25-1.40	0.20-0.60	0.13-0.19	0.0-2.9	0.0-0.5	.28	.28	!	!	!
Ascalon	0.4	12 20		2 00 6 00	 		11 0 2 0	l I 24	   .24	l I 5	l I 3	l I 86
ASCATON	4-15	•		2.00-6.00 0.60-2.00	•	•				l a	3 	00 
				0.60-6.00		•		•	37	l I	l I	I I
	13 00	1 13 20	1.25 1.50   	0.00 0.00	1	0.0 <u>2.</u> 5	1	•37 	•3, 	i I	! 	! 
174:		i			i	i I	i	İ	i		! 	i
Pleasant, rarely	! 	i			i	İ	i	İ	i	i	İ	i
ponded	0-2	20-27	1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	2-40	37-55	1.15-1.30	0.20-0.60	0.14-0.21	6.0-8.9	0.5-2.0	.24	.24	İ	İ	İ
	40-60	27-45	1.15-1.30	0.06-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.32	.32	ĺ	ĺ	ĺ
					I	l			l			
175:											l	l
Rago, rarely					I	l		l	l			
flooded		•		0.20-0.60		•				5	6	48
				0.06-0.60		•	•	•		!	!	!
	47-60	15-27	1.25-1.30	0.20-0.60	0.14-0.20	0.0-2.9	0.0-1.0	.43	.43	!		
186					1	l	!		!		!	
176:					1	l		l i			 	
Rago, dry, rarely flooded-	0 10	   10 27		0 20 0 60	 	1	1 0 4 0	   27	   27	   _	l I 6	l I 48
_	'			0.06-0.60		•		•		ا	1	<del>1</del> 0
	'			0.20-0.60		•		•		i I	! 	! !
		,~ <u>~</u> /				, 0.0 <b>2.</b> 0		, 	, 		İ	İ
177:		i			i	İ	i	i	i	i	i	i
Razor	0-2	28-40	1.25-1.40	0.60-2.00	0.17-0.21	3.0-5.9	1.0-2.0	.20	.20	3	4L	86
	2-15	35-60	1.15-1.30	0.06-0.60	0.14-0.21	6.0-8.9	0.5-1.0	.24	.24		l	I
	15-27	35-60	1.15-1.30	0.00-0.06	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28		l	I
	27-37			0.00-0.00							l	
					[						l	1

Table 18.--Physical Properties of the Soils--Continued

Map symbol	Depth	   Clay	Moist		  Available		Organic		on fact	ors	erodi-	Wind  erodi-
and soil name			bulk	bility		extensi-	matter				bility	
			density	(Ksat)	capacity	bility		K	Kf	Т	group	index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					ļ
178:		 			l I	 	 	 	 		 	 
Razor, moist	0-2	28-40	  1.25-1.40	0.60-2.00	  0.17-0.21	3.0-5.9	1.0-2.0	.20	.20	3	   4L	l 86
	2-15			0.06-0.60	•	•	•		.24		i	i
İ	15-27	35-60	1.15-1.30	0.00-0.06	0.13-0.16	6.0-8.9	0.0-0.5	.28	.28		į	İ
	27-37			0.00-0.00								
												ļ
179: Sampson, rarely		 			 	 	 	l i				
flooded	0-7	l   15-27	  1.25=1.40	0.60-2.00	I   0 . 14=0 . 18	I   0.0=2.9	1 1 - 0 - 4 - 0	l I .28	.28	5	l l 6	l 48
2200404				0.20-2.00	•	•	•		.24			
				0.20-0.60	•	•	•				i	i
İ		ĺ	ĺ		ĺ	ĺ	İ	ĺ	İ		ĺ	İ
180:												
Sampson, dry,												
rarely flooded-				0.60-2.00	•	•	•		.28	5	6	48
	7-36			0.20-2.00 0.20-0.60	•	•	•		.24   .28		 	
	30-60	15-30	1.25 <b>-</b> 1.40	0.20-0.60	0.14-0.21 	0.0-2.9 	10.0-1.0	•40 	•20   		l I	 
181:		i			i I	i I	i		i		<u> </u>	i
Satanta	0-4	15-27	1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	1.0-3.0	.28	.28	5	6	48
İ	4-19	18-35	1.25-1.40	0.60-2.00	0.14-0.21	0.0-2.9	0.5-2.0	.28	.28		ĺ	Ì
	19-28	18-35	1.25-1.40	0.20-0.60	0.14-0.21	0.0-2.9	0.5-2.0	.28	.28			
	28-60	8-25	1.25-1.40	2.00-6.00	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43			
100												!
182: Satanta, dry	0-4	   15-27	  1 25=1 40	0.60-2.00	  0 14=0 18	   0 0=2 9	  1 0=3 0	   28	   .28	5	l l 6	l l 48
bacanca, dry	4-19			0.60-2.00	•	•	•		.28	,	1	40
				0.20-0.60	•	•	•		.28		i	i
	28-60			2.00-6.00	•	•	•		.43		i	i
183:					!							
Seldom, rarely										_		
flooded	0-7			2.00-6.00	•	•	•		.24	5	3	86
	7-15 15-42			2.00-6.00 2.00-6.00	•	•	•		.24   .28		l I	i i
	42-60			0.20-0.60	•	•	•		1 .17		İ	i
		i	i		İ	i İ	i	İ	i i		i	i
184:												
Shingle				0.20-0.60	•			•	.32	2	4L	86
	4-15	20-35	1.15-1.30	0.20-0.60	0.15-0.21	:	0.0-0.5	.43	.43			!
	15-25			0.00-0.20							 	
Midway	0-4	l   30-40	  1.25-1.40	0.06-0.20	  0.17-0.21	   3.0-5.9	10.5-2.0	l   .24	.24	2	   4L	l 86
	4-15			0.00-0.20	•					_	i	i
j	15-25	i i	i i	0.00-0.00	i	i	i		i i		į	į
185:					!	[			! !			
Shingle, moist					•	•	•			2	4L	86
				0.20-0.60 0.00-0.20	•	0.0-2.9		•	.43 		 	
	15-25	 	 	0.00-0.20	 	 	 	 	 		l I	
Midway, moist	0-4	30-40	  1.25-1.40	0.06-0.20	  0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	   4L	86
Ī	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24		į	İ
İ	15-25		l Ì	0.00-0.00	i	i	i		i i			
		[			ļ	[	1					
186:	0.0									-		
Sundance				6.00-19.99	•	•	•			5	2	134
				0.60-6.00 0.20-0.60	•			•			I I	1
				0.60-2.00	•			•				i
		25	• -0						, ,		:	!

Table 18.--Physical Properties of the Soils--Continued

Man	Don-t-		   Weist	Dome -		   Time===	:	Erosi 	on fac	tors	:	Wind  orodi
Map symbol and soil name	Depth	Clay	Moist   bulk	:	Available   water	Linear  extensi-	Organic		1		erodi-	:
and soll name	 	l I	density	bility   (Ksat)	capacity	bility	macter	l K	   Kf	l Imr	bility  group	
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			-		
		!	ļ	<u> </u>	ļ.	ļ	!	l	ļ	ļ		ļ
187: Table Mountain,									!	!		!
rarely flooded-	0-6	   15-27	  1 25_1 40	0.60-6.00	 	   n n_2 a	1 1 1 1 1 1 1	   2Ω	.28	   5	l l 6	l I 48
rarely 1100ded-		•	•	0.60-8.00	•	•				l a	1 0	40 
	'	•	•	0.60-2.00		•		•			i	 
İ		Ī	ĺ	ĺ	ĺ	ĺ	Ī	ĺ	ĺ	ĺ	ĺ	ĺ
188: Travessilla	0-3	   12_10	  1 25_1 50	   2.00-6.00	 	0 0-2 0	10 5-2 0	   20	   .28	   1	   3	   86
ilavessilia	3-13	•	•	2.00-6.00	•	•				+	1 3	66 
	13-23			0.20-0.60							i	 
İ	İ	İ	İ	İ	İ	İ	į	İ	İ	İ	İ	İ
Rock outcrop	0-60			0.20-0.60						-	8	0
189:		l İ	! 	l I	 	 		 	 	 	 	 
Truckton	0-6	8-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	1.0-2.0	.24	.24	3	3	86
	6-16	8-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28			
	16-60	2-12	1.45-1.60	6.00-19.99	0.05-0.06	0.0-2.9	0.0-0.5	.15	.15		ļ	
190:		 	 	 	 	 		 	 	 		 
Truckton	0-6	l 8-20	  1.35-1.50	2.00-6.00	  0.10-0.13	l 0.0-2.9	11.0-2.0	l   .24	.24	l   3	l l 3	l I 86
11 40.10011	6-16	•	•	2.00-6.00	•	•				İ		
j	16-60	•	•	6.00-19.99	•	•				i	i	i
		İ	<u> </u>	!	ļ.	ļ	!		ļ	!	ļ	
191:	0.6											
Truckton, dry	0-6 6-16		•	2.00-6.00		•	'			3 	3	86 
	16-60	•	•	6.00-19.99	•	•				 	i i	 
		i	İ	İ		İ	İ		İ	i	i	İ
192:				l	I							
Truckton, dry		•	•	2.00-6.00	•	•				3	3	86
	6-16	•	•	2.00-6.00	•	•				!		ļ
	16-60	2-12	1.45-1.60 	6.00-19.99 	0.05-0.06 	0.0-2.9 	10.0-0.5	   •T2	.15 	 	l I	 
193:		i	! 	İ	i i	! 	i		i	i	i	 
Valent	0-3	1-6	1.45-1.60	19.99-99.62	0.05-0.08	0.0-2.9	0.5-2.0	.17	.17	5	1	220
	3-60	1-8	1.45-1.60	6.00-19.99	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20			
104					[							
194:	0.3	16	  1 45 1 60				10 5 2 0	17	   .17		   1	
Valent	0-3 3-60	•	•	19.99-99.62   6.00-19.99	•	•			.17	5 	+	220 
		- 0							120	i	i	
Bijou	0-4	4-10	1.45-1.60	6.00-19.99	0.06-0.08	0.0-2.9	0.5-2.0	.20	.20	4	2	134
	4-9	4-10	1.45-1.60	6.00-19.99	0.06-0.08	0.0-2.9	0.5-1.0	.20	.20			l
1		•		2.00-6.00	•	•	•	•				I
	36-60	4-10	1.45-1.60	6.00-19.99	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20			
195:	 	 	l I	! 	 	l I		l I	l I	 		l İ
Valent	0-3	1-6	1.45-1.60	  19.99-99.62	0.05-0.08	0.0-2.9	0.5-2.0	.17	.17	5	1	220
j	3-60	•	•	6.00-19.99		•		•		i	i	i
Vona		•		6.00-19.99	•	•	•	•		5	2	134
	16-25	•		2.00-6.00	•	•	•	•		1		l I
	25-60	•	•	2.00-19.99		•		•			i	 
		į	İ	İ	İ	İ	İ		İ	İ	İ	İ
196:		I	l		1	l	]				ļ	
Valent		•	•	19.99-99.62		•		•		5	1	220
	3-60	1-8 	1.45-1.60 	6.00-19.99	0.05-0.08	0.0-2.9	10.0-0.5	.20 	.20		I	[ 
Vonid	0-6	4-10	  1.45-1.60	   6.00-19.99	  0.06-0.08	0.0-2.9	0.5-2.0	.20	.20	l   5	   2	   134
	6-34	•	•	2.00-6.00		•		•			i i	, 
	34-52	•	•	2.00-6.00		•		•			į	İ
İ	52-60	5-15	1.35-1.60	2.00-19.99	0.06-0.13	0.0-2.9	0.0-0.5	.32	.32		1	
				l								I

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	   Clay 	Moist   bulk	Permea-   bility	  Available   water	   Linear  extensi-	Organic	 	on fact	I	erodi-	
		i	density	(Ksat)	capacity	bility		l K	   Kf	   T	group	
	In	Pct	g/cc	In/hr	In/in	Pct	Pct		ļ			
 197:		 	 	 	 	 	 	l I	 	 	 	 
Vona	0-7	4-10	1.45-1.60	6.00-19.99	0.06-0.08	0.0-2.9	0.5-2.0	.20	.20	5	2	134
	7-16	10-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28			I
	16-25	8-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.0-0.5	.32	.32			l
	25-60	5 <b>-1</b> 5	1.35-1.60	2.00-19.99	0.06-0.13	0.0-2.9	0.0-0.5	.32 I	.32 		 	 
198:			İ	! 	İ	İ	i	 	İ	İ		
Vona	0-7	•	•	2.00-6.00	•	•	•		.28	5	3	86
	7-16	•	•	2.00-6.00	•	•	•		.28	ļ	!	
	16-25	•	•	2.00-6.00	•	•	•				1	1
	25-60	2-12	1.35-1.60	2.00-19.99 		0.0-2.9		.32 	.32 	l I	 	 
199:					į		į.		į	į 	į	į
Vona	0-7	•	•	2.00-6.00	•	•	•		.28	5	3	86
	7-16 16-25	•	•	2.00-6.00	•	•	•		.28		!	
	25-60	•	•	2.00-6.00   2.00-19.99	•	•	•		.32   .32	l I	 	 
j		İ	İ	İ	İ	İ	i	İ	i	i	i	i
200:   Vona	0-7	   10-15	  1 35_1 50	   2.00-6.00	  0 10-0 13	0 0-2 9	10 5-2 0	   28	   .28	   5	3	   86
vona	7-16	•	•	2.00-6.00	•	•	•		.28	ا	1 3	00 
	16-25	•	•	2.00-6.00	•	•	•		.32	i	i	İ
İ	25-60	•	•	2.00-19.99	•	•	•		.32	i	i	i
Karval	0-5	   3_12	  1 45_1 60	   6.00-19.99	 	0 0-2 9	10 5-2 0	   .10	   .20	   5	   2	   134
INGI VGI	5-40	•	•	19.99-99.62		•	•		1.10	1	-	1
	40-60	•	•	19.99-99.62	•	•	•		.20	İ		İ
***************************************	0.4											
Midway, moist	0-4 4-15	•	•	0.06-0.20		•	•		.24   .24	2 	4L	86 
	15-25			0.00-0.20						 	i	 
201:					[		1					
Vona	0-7	   10-15	  1.35-1.50	2.00-6.00	  0.10-0.13	l   0.0-2.9	10.5-2.0	l   .28	   .28	l I5	l l 3	l I 86
1	7-16	•	•	2.00-6.00	•	•	•			i	i -	
	16-25	8-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.0-0.5	.32	.32	i	i	i
	25-60	5-15	1.35-1.60	2.00-19.99	0.06-0.13	0.0-2.9	0.0-0.5	.32	.32	İ	İ	İ
Midway, moist	0-4	   30-40	  1.25-1.40	   0.06-0.20	  0.17-0.21	   3.0-5.9	10.5-2.0	   .24	   .24	   2	   4L	   86
_	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24	i	i	i
	15-25			0.00-0.00						İ	İ	İ
202:		 	 	 	 	 		l I	 	l I	 	l I
Vona	0-7	10-15	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	7-16	10-18	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28			l
	'	•	•	2.00-6.00		•	•	•				I
	25-60	5 <b>-1</b> 5 	1.35 <b>-1.</b> 60	2.00-19.99	0.06-0.13 	0.0-2.9 	0.0-0.5	.32 	.32 	 	 	 
Seldom	0-7	8-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	1.0-3.0	.24	.24	5	3	86
	7-15	8-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	1.0-2.0	.24	.24			l
	'	•	•	2.00-6.00		•	•	•			ļ	
	42-60	10-40 	1.25-1.50 	0.20-0.60 	0.10-0.17 	0.0-2.9 	0.0-0.5	.17 	.17 	l I	l I	 
203:		İ	İ	İ	İ	İ	i	İ	i	İ	i	i
Vonid				6.00-19.99						5	2	134
		•		2.00-6.00		•	•			ļ	ļ.	
	'	•	•	2.00-6.00 2.00-19.99		•	•	•			 	 
	J2-00	1 2-12	11.22-1.60	 		0.0-2.9		•34 	.34			! 
204:		l	İ	ĺ	İ	ĺ	İ	l	İ	İ	İ	İ
Vonid		•	•	2.00-6.00		•	•	•		5	3	86
	'	•	•	2.00-6.00		•	•	•			I	
	'	•	•	2.00-6.00 2.00-19.99		•	•	•			I I	I I
	52-00	1 2-12	11.32-1.00	1 2.00-19.99	10.00-0.13	1 0.0-2.9	10.0-0.5	.34	1 .32	I	I	I

Table 18.--Physical Properties of the Soils--Continued

Map symbol   and soil name	Depth	   Clay 	   Moist   bulk	   Permea-   bility	  Available   water	:	  Organic  matter	•	on fact	 	wind  erodi-  bility	
		i	density		capacity	bility		K	Kf	'   T	group	
	In	Pct	g/cc	In/hr	In/in	Pct	Pct	İ				
I		I		I	l							
205:	0.6											
Vonid	0-6 6-34		•	2.00-6.00	•	•		•	.28   .28	5 	3 	86 
i	34-52		•	2.00-6.00	•	•		•		 	İ	İ
i	52-60		•	2.00-19.99	•			•		İ	i	i
Į.				I								
206:	0.6		  1 25 1 50							   5		
Vonid	0-6 6-34	'	•	2.00-6.00	•	•	'	•	.28   .28	l p	3 	86 
i	34-52		•	2.00-6.00	•	•		•	.32	 	İ	İ
į	52-60		•	2.00-19.99	•	•		•	.32	i	i	i
I				I								
Karval			•	6.00-19.99	•	•		•	.20	5	2	134
ļ	5-40 40-60		•	19.99-99.62  19.99-99.62	•	•		•	.10   .20	 		 
,	40-00	3-10	1.45-1.60 	19.99-99.02	0.03-0.07 	0.0-2.9	10.0-0.5	•20 	•20 	l I	 	 
Midway	0-4	30-40	  1.25-1.40	0.06-0.20	0.17-0.21	3.0-5.9	0.5-2.0	.24	.24	2	4L	86
İ	4-15	35-45	1.15-1.40	0.00-0.20	0.14-0.21	3.0-5.9	0.0-0.5	.24	.24		ĺ	ĺ
	15-25			0.00-0.00								
207												
207:     Vonid	0-6	   10-15	  1 35=1 50	2.00-6.00	  0 10=0 13	   0 0=2 9	10 5-2 0	   28	   .28	   5	   3	l I 86
VOIIIu	6-34		•	2.00-6.00	•	•		•	.28	1	1	00 
i	34-52		•	2.00-6.00	•	•		•		i	i	i
Ì	52-60	5-15	1.35-1.60	2.00-19.99	0.06-0.13	0.0-2.9	0.0-0.5	.32	.32		ĺ	ĺ
. !		[		!	!	[	!	!	!			
Midway	0-4 4-15	'	•	0.06-0.20	•	•	'	•	.24   .24	2	4L	86
	15-25	35-45	 	0.00-0.20	0.14-0.21 	3.0-5.9		•24		l I	l I	l I
i		i	İ		İ	İ	i	i	İ	İ	i	İ
208:				I								
Vonid	0-6		•	2.00-6.00	•	•		•	.28	5	3	86
ļ	6-34 34-52		•	2.00-6.00	•	•		•	.28   .32	 		
	52-60		•	2.00-6.00	•	•		•	32	l I	l I	l I
i			 							İ	i	i
Seldom	0-7	8-20	1.35-1.50	2.00-6.00	0.10-0.13	0.0-2.9	1.0-3.0	.24	.24	5	3	86
I	7-15	'	•	2.00-6.00	•	•	'	•	.24			
ļ	15-42		•	2.00-6.00	•	•		•	.28			
	42-60	10-40 	1.25 <b>-</b> 1.50	0.20-0.60	0.10-0.17 	0.0-2.9 	10.0-0.5	•±/	.17 	l I	l I	 
209:		i	! 	i	i I	i I	i	İ		' 	<u> </u>	i
Wages	0-5	18-24	1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	1.0-3.0	.28	.28	5	5	56
I			•	0.60-2.00	•			•				
			•	0.20-2.00			•					
	17-60	10-27 	1.25-1.50 	0.20-0.60	0.10-0.18 	0.0-2.9	0.5-1.0	.28 	.28 	 	 	 
210:		 	I I	! !	! 	 		l I	 	l I	 	 
Wages	0-4	15-24	  1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	2.0-4.0	.28	.28	   5	5	56
į	4-10	20-35	1.25-1.40	0.60-2.00	0.14-0.21	0.0-2.9	1.0-2.0	.37	.37	l		
!			•	0.20-2.00			•				ļ .	
ļ	35-60	12-25	1.25-1.50	0.20-0.60	0.09-0.16	0.0-2.9	0.0-0.5	.43	.43		I	
 211:		I I	l I	I I	I I	I I	I I	l I	I I	l I	I I	I I
Wages, dry	0-4	15-24	  1.25-1.40	0.60-2.00	  0.14-0.18	0.0-2.9	2.0-4.0	.28	.28	   5	   5	   56
			•	0.60-2.00	•		•	•		İ	i	i
i				0.20-2.00								
I	35-60	12-25	1.25-1.50	0.20-0.60	0.09-0.16	0.0-2.9	10.0-0.5	.43	.43	I	I	I

Table 18.--Physical Properties of the Soils--Continued

Map symbol	Depth	   Clay	Moist	   Permea-	  Available	   Linear	  Organic		on fact	ors	Wind  erodi-	Wind  erodi-
and soil name			bulk	bility	water	extensi-	matter				bility	bility
			density	(Ksat)	capacity	bility		K	Kf	Т	group	index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
212:		 	 	 	 	 	 	 	 		 	 
Wages	0-4	15-24	1.25-1.40	0.60-2.00	0.14-0.18	0.0-2.9	2.0-4.0	.28	.28	5	5	56
ĺ	4-10	20-35	1.25-1.40	0.60-2.00	0.14-0.21	0.0-2.9	1.0-2.0	.37	37			
ĺ	10-35	15-35	1.25-1.40	0.20-2.00	0.13-0.19	0.0-2.9	0.5-1.0	.37	37			
	35-60	12-25	1.25-1.50	0.20-0.60	0.09-0.16	0.0-2.9	0.0-0.5	.43	.43			
Karval	0-5	   3-12	  1.45-1.60	   6.00-19.99	  0.04-0.06	   0.0-2.9	0.5-2.0	   .10	   .20	5	   2	   134
	5-40	3-10	1.45-1.60	19.99-99.62	0.02-0.05	0.0-2.9	0.0-0.5	.05	.10			
	40-60	3-10	1.45-1.60	19.99-99.62	0.03-0.07	0.0-2.9	0.0-0.5	.20	.20		l	l
213:		 		 	 	 	 	 	 		 	 
Weld	0-4	19-25	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	4-19	35-45	1.15-1.30	0.20-0.60	0.14-0.21	3.0-5.9	0.5-2.0	.24	.24		İ	İ
j	19-44	28-39	1.15-1.30	0.20-0.60	0.17-0.21	0.0-2.9	0.5-2.0	.32	.32		ĺ	ĺ
	44-60	16-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49		ļ	ļ
214:		l		 	 	 	 	l I	 		 	 
Weld, dry	0-4	19-25	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	4-19	35-45	1.15-1.30	0.20-0.60	0.14-0.21	3.0-5.9	0.5-2.0	.24	.24		İ	İ
	19-44	28-39	1.15-1.30	0.20-0.60	0.17-0.21	0.0-2.9	0.5-2.0	.32	.32		İ	İ
	44-60	16-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49		ĺ	ļ
215:		İ		 	 	 	 	l I	 		l I	l I
Wiley	0-4	15-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	1.0-2.0	.37	.37	5	4L	86
_	4-23	18-35	1.15-1.30	0.60-2.00	0.15-0.21	3.0-5.9	0.5-1.0	.43	.43		i	i
	23-60	15-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49		į	į
216:		İ		 	 	 	 	l I	 		l I	l I
Wiley	0-4	15-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	1.0-2.0	.37	.37	5	4L	86
_	4-23	18-35	1.15-1.30	0.60-2.00	0.15-0.21	3.0-5.9	0.5-1.0	.43	.43		i	i
	23-60	15-27	1.15-1.30	0.20-0.60	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49		į	į
217:		 	 	 	 	 	 	 	 		 	 
Wilid	0-3	15-27	1.15 <b>-</b> 1.30	0.60-2.00	0.15-0.20	0.0-2.9	1.0-2.0	.37	.37	5	4L	86
	3-21	18-35	1.15-1.30	0.60-2.00	0.15-0.21	3.0-5.9	0.5-1.0	.43	.43		i	i
	21-60	15-27	1.15-1.30	0.60-6.00	0.15-0.20	0.0-2.9	0.0-0.5	.49	.49		į	į
218:		İ		 	 	 	 	l I	 		l I	l I
Water.			İ	İ	İ	İ	į	İ	i i		İ	İ
219:		 		 	 	 	 	 	 		 	 
Gravel pits	0-5	   0-1		6.00-19.99	0.01-0.02	0.0-2.9	0.0-0.1	.02	, 	_	l I 8	l 0
	5-60	0-1		6.00-19.99	•	•	•	.02			İ	
220:			 	 	 	 		 			 	 
Access denied.		l	l I	I I	I I	I I	I I	l I	, l		I I	l I
recess delited.			 	! 	I I	I 		l I	, l		I I	i I

Table 19.--Chemical Properties of the Soils

(Absence of an entry indicates that the data were not estimated. An entry of zero indicates an estimate of zero.)

Map symbol and soil name	Depth	Cation-  exchange  capacity	Soil  reaction 	Calcium    carbonate	Gypsum   	Salinity	Sodium  adsorption   ratio
!	In	meq/100g	PH	Pct	Pct	mmhos/cm	
   LO1:		 	 	 			
Apishapa, rarely		i	i	i i	i		i
ponded	0-8	15-35	7.4-7.8	0-5	0-5	0.0-4.0	0
!	8-60	20-45	7.4-9.0	5-15	0-5	0.8-0.0	0
L02:				i i	i		i
Arvada	0-4	20-35	7.9-8.4	1-5	0	0.0-2.0	0-5
	4-25	25-40	7.9-9.0	1-5	0	0.8-0.0	15-30
	25-44	20-45	7.9-9.0	5-15	0-3	4.0-16.0	10-30
	44-60	15-35 	7.9-9.0	1-5   	0-3	2.0-16.0	10-30
L03:		į	į	į į	į		į .
Ascalon	0-4	5.0-15	6.6-7.3	0	0	0	0
!	4-15	10-20	6.6-7.8	0	0	0	0
	15-60	5.0-15 	7.9-8.4	5 <b>-1</b> 5	0	0.0-2.0	0
L04:					į	_	
Ascalon	0-4	5.0-15	6.6-7.3	0	0	0	0
I	4-15 15-60	10-20   5.0-15	6.6-7.8   7.9-8.4	0     5-15	0   0	0 0.0-2.0	0   0
i	15-00		7.5-0.4	3-13		0.0-2.0	
L05:   Ascalon	0-4	   5.0-15	6.6-7.3	   0	0	0	   0
ASCATON	4-15	10-20	6.6-7.8	1 0 1	0 1	0	1 0
i	15-60	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0
į		į	į	į į	į		į
L06:   Ascalon, dry	0-4	   5.0-15	6.6-7.3	   0	0 1	0	   0
incuron, ary	4-15	10-20	6.6-7.8	1 0 1	0 1	0	1 0
į	15-60	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0
   LO7:		 	 	 	l		
Ascalon, dry		5.0-15	6.6-7.3	j 0 j	0	0	0
	4-15	10-20	6.6-7.8	0	0	0	0
	15-60	5.0-15 	7.9-8.4	5 <b>-1</b> 5	0	0.0-2.0	0 
L08:		İ	İ	i i	i		i
Ascalon, dry		5.0-15	6.6-7.3	0	0	0	0
	4-15	10-20	6.6-7.8	0	0	0	0
	15-60	5.0-15 	7.9-8.4	5 <b>-1</b> 5	0	0.0-2.0	0 
L09:		İ	į	i i	i		i
Ascalon	0-4	5.0-15	6.6-7.3	0	0	0	0
ļ		10-20			0	0	0
	15-60	5.0-15	7.9-8.4	5 <b>-1</b> 5	0	0.0-2.0	0 
Haxtun			6.6-7.3		0	0	0
		5.0-15			0	0	0
		10-25   5.0-15	7.4-8.4		0   0-2	0.0-2.0 0.0-2.0	0   0
i		į	į	į i	i		į
l10:   Ascalon, dry	0-4	   5.0-15	6.6-7.3	   0	0	0	   0
					0	0	1 0
i		5.0-15	7.9-8.4		0	0.0-2.0	0
Havtun down	0-4	3 0-15		   0	0	0	   0
Haxtun, dry		5.0-15	•		0	0	0   0
		10-25			0	0.0-2.0	1 0
į		,	, , , , , , ,	, , , , ,	- 1	0.0 2.0	, ,

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth 	Cation-  exchange  capacity	:	Calcium  carbonate	Gypsum   	Salinity	Sodium  adsorption   ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	i
	İ	į	į -	i i	i i		i
111:							1
Bacid	0-4	10-20	7.4-7.8	0	0	0	0
	4-11	20-35	7.4-8.4	0-2	0	0	0
	11-21	20-40	7.4-8.4	1-5	0	0	0
	21-60	10-30	7.9-9.0	5-15	0-2	0	0
			!	!			!
112:		!	!	!			!
Bankard,	l i	!	1		ļ		!
occasionally flooded	l   0-5	2.0-10	7 4 7 0	1 0 2	   0	0	   0
1100ded	0-5   5-60	0.0-5.0	7.4-7.8	0-2   1-5	0     0	0.0-2.0	l 0
	] 3-60 	1 0.0-5.0	/.4-0.4	1 1-5		0.0-2.0	1 0
Glenberg, occasionally	   	   	   	   			
flooded	0-3	5.0-15	6.6-7.3	0-1	0	0.0-2.0	j o
	3-32	4.0-10	7.9-8.4	1-5	0	0.0-2.0	0
	32-60	0.0-5.0	7.4-8.4	1-5	0	0.0-2.0	0
		1					1
113:	l						1
Bijou	0-4	3.0-10	6.6-7.3	0	0	0	0
	4-9	3.0-10	6.6-7.8	0	0	0	0
		5.0-15		0	0	0	0
	36-60	2.0-5.0	6.6-7.8	0	0	0	0
			!	!			!
114:							
Bijou, moist		3.0-10	6.6-7.3	:	0	0	0
	4-9	3.0-10	6.6-7.8	0	0	0	0
	9-36	5.0-15	•	0   0	0     0	0	0
	36-60 	2.0-5.0	6.6-7.8	1 0	0	0	0
115:	l I		I I				-
Bijou, moist	   0-4	3.0-10	6.6-7.3	0		0	0
21,00, 110150	4-9	3.0-10	6.6-7.8	0	0	0	1 0
		5.0-15	:	0	0 1	0	0
	36-60	2.0-5.0	6.6-7.8	0	0 1	0	i o
	İ	İ	į	į i	i i		i
116:	İ	İ	i	į i	i i		İ
Blakeland	0-12	3.0-10	6.6-7.3	0	0	0	0
	12-60	1.0-5.0	6.1-7.8	0-5	0	0	0
							I
117:							I
Bresser	0-3	5.0-15	6.6-7.3	0	0	0	0
	3-13		6.6-7.3	0	0	0	0
	13-60	1.0-5.0	6.6-7.3	0	0	0	0
110.	l I	1	I	1			1
118: Campo	l 0−3 I	   10-25	   7.4-7.8	   0	   0	0	0
Campo	0-3   3-15		6.6-8.4		0     0	0	1 0
	3-15	•	7.9-8.4		0     0-1	0	1 0
	15-00 	10-30	,.,,-0.4	3-13	•	· ·	1
119:	İ	i	i				1
Canyon	0-3	5.0-15	7.9-8.4	0-10	0	0.0-2.0	0
=	3-10		7.9-8.4		0	0.0-2.0	0
	10-14		i	i i	i i		i
	l			I i	ı i		İ
Rock outcrop	0-60						
	l						1
120:	l						1
		5.0-20	7.9-8.4	1-5	0	0	0
Colby		5.0-20	7.4-9.0		0     0	0	1 0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol   and soil name	Depth	Cation-  exchange  capacity	•	Calcium    carbonate	Gypsum     	Salinity	Sodium  adsorption   ratio
I	In	meq/100g	pH	Pct	Pct	mmhos/cm	
į			i	i i	i		i
121:			1		l I		I
Colby	0-5	5.0-20	7.9-8.4	1-5	0	0	0
	5-60	5.0-15	7.4-9.0	5-15	0	0	0
122:		 	l i				l I
Colby	0-5	5.0-20	7.9-8.4	1 1-5		0	l o
	5-60	5.0-15	7.4-9.0	5-15	0	0	0
j		İ	į	į į	i i		İ
Weld	0-4	15-20	6.6-7.3	0	0	0	0
ļ	4-19	20-40	6.6-7.8		0	0	0
ļ	19-44	15-30	7.4-8.4		0	0	0
l	44-60	10-20	7.9-9.0	5-15	0	0	0
123:		l I	 		 		-
Firstview	0-4	3.0-10	7.9-8.4	0	0	0.0-4.0	0-5
i	4-20	10-25	7.9-9.0		0-5	2.0-8.0	10-20
j	20-35	10-25	7.9-9.6	5-15	0-5	4.0-16.0	15-25
I	35-60	1.0-25	7.9-9.6	5-15	0-5	4.0-16.0	0-10
!					. !		
124:						•	
Fort Collins	0-7 7-13	5.0-15   10-25	6.6-7.8		0     0	0	0   0
l I	13-30	•	7.9-9.0		0     0	0.0-2.0	0
l I	30-60	4.0-15	7.9-9.0		0	0.0-2.0	1 0
İ		i	i	i i	i		i
125:		İ	İ	į į	İ		Ì
Fort Collins	0-7	5.0-15	6.6-7.3	0	0	0	0
ļ	7-13	10-25	6.6-7.8		0	0	0
ļ	13-30	•	7.9-9.0		0	0.0-2.0	0
ļ	30-60	4.0-15	7.9-9.0	5-15	0	0.0-2.0	0
126:		l I	I I	 			1
Fort Collins	0-7	5.0-15	6.6-7.3	1 0 1		0	l o
İ	7-13	10-25	6.6-7.8		0	0	j o
ĺ	13-30	5.0-25	7.9-9.0	0-15	0	0.0-2.0	0
I	30-60	4.0-15	7.9-9.0	5-15	0	0.0-2.0	0
_							
Karval	0-5	2.0-10	5.6-6.0		0	0	0
l	5-40 40-60	•	6.6-8.4		0     0	0 0.0-2.0	0   0
l I	40-00	1.0-3.0	0.0-0.4	1 0-5 1		0.0-2.0	1
127:		i	i	i i	i i		i
Fort Collins	0-7	5.0-15	6.6-7.3	0 1	0	0	0
1	7-13	10-25	6.6-7.8		0	0	0
ļ		5.0-25	7.9-9.0		0	0.0-2.0	0
	30-60	4.0-15	7.9-9.0	5-15	0	0.0-2.0	0
  Platner	0-7	10-20	6.6-7.3	0	   0	0	   0
1 Tacher	7-15		6.6-7.8		0     0	0	0
i	15-40		7.4-8.4		0	0.0-2.0	0
į		5.0-20	7.9-8.4		0	0.0-2.0	0
į				l i	ı İ		
128:			[				
Fort Collins		5.0-15	6.6-7.3		0	0	0
	7-13		6.6-7.8		0	0	0
I		5.0-25   4.0-15	7.9-9.0		0     0	0.0-2.0 0.0-2.0	0   0
	30-00	1 4.0-13	1.5-3.0	1 2-12		0.0-2.0	
l I					· I		
Razor, moist	0-2	20-35	7.9-8.4	0-5	0 1	0.0-2.0	0-5
Razor, moist	0-2 2-21		7.9-8.4		0	0.0-2.0 2.0-8.0	0-5 0-10
Razor, moist		20-50	•	1-10			:

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-  exchange  capacity		Calcium  carbonate 	Gypsum	Salinity	Sodium  adsorption   ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	i
			!	!	. !		ļ
129:	0-2	   5.0-15	7.4-7.8	l 0	   0	0	   0
Fort	2-5	5.0-15	:	1 0	0     0	0	1 0
	5-34	10-25	:	5-15	0     0	0.0-4.0	0-15
	34-60	10-25	7.9-9.0	5-15		0.0-8.0	0-15
130:							
Fort	0-2	5.0-15	7.4-7.8	1 0	   0	0	I I 0
1010	2-5	5.0-15	6.6-7.8		0	0	0
		10-25	:	5-15	0 1	0.0-4.0	0-15
İ	34-60	10-25	7.9-9.0	5-15	i	0.8-0.0	0-15
131:							
Fort	0-2	5.0-15	7.4-7.8	1 0	   0	0	I I 0
	2-5	5.0-15	6.6-7.8		0 1	0	0
	5-34	10-25	:	5-15	0 1	0.0-4.0	0-15
	34-60	10-25	7.9-9.0	5-15	i j	0.0-8.0	0-15
Karval	0-5	2.0-10	   5.6-6.0	0-2	   0	0	   0
Rai vai	5-40		6.6-8.4		0     0	0	1 0
	40-60	:	6.6-8.4		0	0.0-2.0	0
120							1
132: Fort	0-2	   5.0-15	7.4-7.8	I 0 I	   0	0	   0
FOI (	2-5	5.0-15	6.6-7.8		0     0	0	1 0
	5-34	10-25	:	5-15	0	0.0-4.0	0-15
	34-60	10-25	7.9-9.0	5-15	i	0.8-0.0	0-15
Razor	0-2	20-35	7.9-8.4	0-5	   0	0.0-2.0	   0-5
Razor	2-21	•	:	1-10	0     0	2.0-8.0	0-10
	21-27		7.4-8.4	1-15	0-5	4.0-8.0	10-15
	27-37				i		
133:							
Haversid, rarely		l I	l I				
flooded		5.0-20	7.9-8.4	0-5	0 1	0.0-4.0	i o
	14-60		7.9-9.0	1-15	0-2	0.0-8.0	0-10
134:							
Haverson, rarely		 	 				<u> </u>
flooded		10-20	7.4-7.8	0-5	0	0	0
	5-15	10-20	7.9-8.4	0-5	0	0.0-4.0	0
	15-60	5.0-20	7.9-8.4	1-15	0-2	4.0-8.0	0-5
135:		 	 		 		
Haxtun	0-4	3.0-15	6.6-7.3	. 0	0	0	j o
	4-17	5.0-15	6.6-7.8	0	0	0	0
	17-44	10-25	7.4-8.4	0-15	0	0.0-2.0	0
	44-60	5.0-15	7.4-8.4	5-15	0-2	0.0-2.0	0
136:		 	 	 			l I
Haxtun, dry	0-4	3.0-15	6.6-7.3	0	0	0	0
İ	4-17	5.0-15	6.6-7.8	0	0	0	0
	17-44		7.4-8.4		0	0.0-2.0	0
	44-60	5.0-15	7.4-8.4	5-15 	0-2	0.0-2.0	0
137:							
Haxtun, dry	0-4	3.0-15	6.6-7.3	0	0	0	j o
i	4-17	5.0-15	6.6-7.8	0	0	0	0
	17-44	10-25   5.0-15	7.4-8.4		0     0	0.0-2.0 0.0-2.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth			Calcium  carbonate	Gypsum	Salinity	Sodium
	In	capacity  meq/100g	pH	Pct	Pct	mmhos/cm	ratio
	111	meq/1009			1	namios/ cm	i
137:		į	į	İ	i i		İ
Olney	0-7	2.0-10	6.6-7.3	0	0	0	0
	7-36	10-25	6.6-7.8	0-10	0	0	0
	36-46	5.0-15	6.6-7.8	0-10	0	0	0
	46-60	1.0-15	7.4-9.0	5-15	0	0	0
138:			1		 		l I
Haxtun	0-4	3.0-15	6.6-7.3	l 0	l 0 1	0	0
	4-17	5.0-15	6.6-7.8		0	0	0
	17-44	10-25	7.4-8.4		0	0.0-2.0	0
	44-60	5.0-15	7.4-8.4	5-15	0-2	0.0-2.0	j o
							1
Olnest	0-8	2.0-10	6.6-7.3		0	0	0
	8-38	10-20	6.6-7.8		0	0	0
	38-60	4.0-15	7.9-9.0	5-15	0	0	0
139:	! 	 	İ				1
Keith	0-10	10-20	7.4-7.8	0	0	0	0
	10-26		6.6-7.8		0	0.0-2.0	0
	26-60	5.0-15	7.9-8.4	3-15	0	0.0-2.0	0
			1				
140:						•	
Keith	0-10	10-20	7.4-7.8	•	0	0	0
	10-26 26-60	10-25   5.0-15	6.6-7.8   7.9-8.4		0     0	0.0-2.0 0.0-2.0	0   0
	20-00	3.0-13	7.5-0.4	3-13	°   	0.0-2.0	"
141:		İ	i	İ	i i		i
Kim	0-4	5.0-20	7.9-8.4	0-5	0	0	j o
	4-38	10-25	7.4-8.4	1-10	0	0	0
	38-60	4.0-20	7.9-9.0	1-15	0-2	0.0-4.0	0
			!		. !		ļ
142:						•	
Kim	0-4 4-38	5.0-20   10-25	7.9-8.4		0     0	0	0
	38-60	4.0-20	7.9-9.0		0     0-2	0.0-4.0	0   0
	30-00	1.0-20	7.5-5.0	1-15	0- <u>2</u>   	0.0-4.0	1
143:		i	į	į	i i		i
Kimst	0-5	10-20	7.9-8.4	5-10	0	0	0
	5-60	5.0-20	7.9-8.4	5-15	0	0.0-4.0	0
							ļ
144: Kimst	   0-5	10-20	7.9-8.4	   5-10	l I I 0 I	0	   0
Kimst	•	•	7.9-8.4		0	0.0-4.0	0
					i i		
145:		į	į	İ	i i		İ
Las Animas,				1			1
occasionally							
flooded	'	5.0-15	7.9-8.4	:	0-5	0.0-4.0	0-5
	6-10	•	7.4-9.0	•	0-5	2.0-8.0	0-5
	10-60	2.0-15	7.4-9.0	1-15	0	0.0-2.0	0
146:	[ [	 		 			
Limon, rarely	! 	i	i				i
flooded	0-6	25-50	8.5-9.0	0-2	0	2.0-8.0	0-2
	6-60	20-50	7.9-9.0		0-5	2.0-8.0	0-10
147:	 						
Limon, moist,					l İ		1
rarely flooded-	0-6	25-50	8.5-9.0	0-2	0	2.0-8.0	0-2
	6-60	20-50	7.9-9.0	1-10	0-5	2.0-8.0	0-10

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-  exchange  capacity	Soil  reaction	Calcium  carbonate 	Gypsum   	Salinity	Sodium  adsorption   ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	I
							ļ
148: Manzanola	l l 0-5	   15-35	7.4-7.8	   1-5	l I I 0 I	0.0-4.0	   0
manizanoia	0-3   5-30	20-40	:	1-15	0     0	0.0-4.0	1 0
	30-60	5.0-25	7.9-9.0	4-15	0-4	2.0-8.0	0-5
149:	 				 		
Manzanst, rarely				1			1
flooded		10-25	7.4-8.4	:	0	0.0-4.0	0-10
	3-37	20-40		5-10	0-1	0.0-4.0	1-10
	37-60 	15-35 	7.9-9.0	5 <b>-1</b> 5 	0-5   	0.0-2.0	1-10
150:	İ	İ	İ	İ	i i		i
Manzanst	0-8	15-30	7.4-7.8	0-10	0	0.0-4.0	0-10
	8-18	15-40		0-10	0	0.0-4.0	0-10
	18-40	20-40		5-10	0-1	0.0-4.0 0.0-2.0	1-10
	40-60 	15-35 	7.9-9.0	5 <b>-1</b> 5	0-5   	0.0-2.0	1-10
151:	İ	İ	i	i	i i		i
Midway	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15	20-35	7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25 				 		
152:	i İ						i
Midway, moist	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15	20-35	7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25						
153:	l I	 	 	 	 		
Midway	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15	20-35	7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25						
Razor	   0-2	20-35	7.9-8.4	   0-5	   0	0.0-2.0	0-5
	2-21	20-50	7.4-8.4	1-10	0	2.0-8.0	0-10
	21-27	20-50	7.4-8.4	1-15	0-5	4.0-8.0	10-15
	27-37						
154:	! 	 		 			İ
Midway, moist	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15	20-35	7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25 				 		
Razor, moist	0-2	20-35	7.9-8.4	0-5	0	0.0-2.0	0-5
	2-21	20-50	7.4-8.4	1-10	0	2.0-8.0	0-10
	21-27		7.4-8.4		0-5	4.0-8.0	10-15
	27-37 				 		
155:	İ		İ	İ	i i		i
Midway	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15		7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25						
Rock outcrop	   0-60					0	
156.	 						
156: Midway, moist	   0-4	20-35	7.9-8.4	   0-5	   0-1	2.0-4.0	   0-5
, morpe	4-15		7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25						
	ļ		ļ				1
Rock outcrop, moist	   0-60	 	 	 	 	0	

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-  exchange  capacity	Soil  reaction	Calcium    carbonate	Gypsum   	Salinity	Sodium  adsorption   ratio
	In	meq/100g	l pH	Pct	Pct	mmhos/cm	12010
			i	i i	i		i
157:		!	!				į.
Nunn	0-5	20-35	6.6-7.3	0	0	0	0
	5-19	20-40	6.6-8.4	0-5	0	0.0-2.0	0
	19-60	10-25	7.4-8.4	4-15	0	0.0-2.0	0 
158:		i	i	i i	i		i
Nunn	0-5	20-35	6.6-7.3	0	0	0	0
	5-19	20-40	6.6-8.4	0-5	0	0.0-2.0	0
	19-60	10-25	7.4-8.4	4-15	0	0.0-2.0	0
Sampson, rarely		 	1				
flooded		10-25	6.6-7.3	i o i	0	0	j 0
	7-36	10-25	6.6-7.8	0	0	0	j o
İ	36-60	5.0-20	7.9-8.4	3-15	0	0.0-2.0	0
150.			1		ļ		
159: Nunn, dry	0-5	20-35	6.6-7.3		0 I	0	   0
	5-19	20-33	6.6-8.4	0-5	0 1	0.0-2.0	1 0
	19-60	10-25	7.4-8.4	4-15	0	0.0-2.0	0
İ		İ	İ	i i	i		į
Sampson, dry,							
rarely flooded-	0-7	10-25	6.6-7.3	0	0	0	0
	7-36	10-25	6.6-7.8	0	0	0	0
	36-60	5.0-20	7.9-8.4	3-15	0	0.0-2.0	0 
160:		i	i	i i	i		i
Olnest	0-8	2.0-10	6.6-7.3	0	0	0	0
	8-38	10-20	6.6-7.8	0	0	0	0
	38-60	4.0-15	7.9-9.0	5-15	0	0	0
161:		1	1		l		l I
Olnest	0-8	5.0-15	6.6-7.3	. 0	0	0	0
	8-38	10-20	6.6-7.8	j 0 j	0	0	j o
İ	38-60	4.0-15	7.9-9.0	5-15	0	0	0
1.50			[		ļ		ļ
162: Olnest	0-8	5.0-15	6.6-7.3		0 I	0	   0
OINCEC	8-38	10-20	6.6-7.8	0 1	0 1	0	1 0
	38-60	4.0-15	7.9-9.0	5-15	0	0	0
ĺ			1		1		1
163:						•	
Olnest	0-8 8-38	5.0-15   10-20	6.6-7.8	0     0	0   0	0	0   0
			7.9-9.0		0 1	0	0
		i	İ	i i	i		i
164:			1				1
Olney		•	6.6-7.3		0	0	0
	7-36	•	6.6-7.8		0	0	0
		5.0-15   1.0-15	6.6-7.8		0   0	0	0   0
						ŭ	
165:		ļ	ļ	ļ i	į		1
Olney		•	6.6-7.3		0	0	0
	4-18		6.6-7.8		0	0	0
		5.0-15	6.6-7.8		0   0	0	0   0
	JI-00	1.0-13	, 3 . 0	2-13	J I	· ·	
166:		İ	İ	į į	i		i
Olney		•	6.6-7.3		0	0	0
	4-18	•	6.6-7.8		0	0	0
		5.0-15	6.6-7.8		0	0	0
	31-60	1.0-15	7.4-9.0	5-15	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth 	Cation-  exchange  capacity	Soil  reaction	Calcium  carbonate	Gypsum	Salinity	Sodium  adsorption   ratio
	In	meq/100g	pН	Pct	Pct	mmhos/cm	I
			İ	[			į.
167:						•	
Olney	0-4	3.0-15	6.6-7.3	0 10	0	0	0
	4-18	10-25		0-10	0     0	0	0
	18-31   31-60	5.0-15   1.0-15	6.6-7.8   7.4-9.0	0-10 5-15	0     0	0	0   0
	3± 00	1.0 15	/ 5.0	1		Ü	
168:	i	i	i	i			i
Olney	0-4	3.0-15	6.6-7.3	. 0	0	0	0
	4-18	10-25	6.6-7.8	0-10	0	0	0
	18-31	5.0-15	6.6-7.8	0-10	0	0	0
	31-60	1.0-15	7.4-9.0	5-15	0	0	0
Midway	0-4	20-35	7.9-8.4		0-1	2.0-4.0	0-5
	4-15	20-35	7.4-8.4	:	1-15	2.0-8.0	1-15
	15-25						
169:	I I	I	I				I
Otero	   0-13	5.0-15	7.4-7.8	0-5	l 0 I	0	   0
Oce10	13-60	2.0-10	7.4-7.8	1-5	0     0	0	1 0
	13 00 	1	/	1		Ü	
170:	i	i	i	i i	i		i
Oterodry	0-11	3.0-15	7.9-8.4	0-5	0	0	0
	11-60	2.0-15	7.4-8.4	1-10	0	0.0-2.0	0
			1	1			
171:			1				
Oterodry		3.0-15	7.9-8.4	:	0	0	0
	11-60	2.0-15	7.4-8.4	1-10	0	0.0-2.0	0
170			!	!			
172: Platner	I I 0-7	10-20	6.6-7.3	0	l 0 l	0	   0
riacher	0-7   7-15	15-35	6.6-7.8		0     0	0	1 0
	15-40	20-35	7.4-8.4		0     0	0.0-2.0	1 0
	40-60	5.0-20	7.9-8.4		0	0.0-2.0	1 0
	i	İ	i	i			i
173:	i	İ	İ	i i	i		į
Platner	0-7	10-20	6.6-7.3	0	0	0	0
	7-15	15-35	6.6-7.8	0-5	0	0	0
	15-40	20-35	7.4-8.4	1-15	0	0.0-2.0	0
	40-60	5.0-20	7.9-8.4	5-15	0	0.0-2.0	0
Ascalon	0-4	5.0-15	6.6-7.3		0     0	0	0
	4-15   15-60	10-20   5.0-15	6.6-7.8   7.9-8.4	0   5-15	0     0	0.0-2.0	0   0
	15-00 	3.0-13	7.5-0.4	1 3-13		0.0-2.0	1
174:	i	i	i	i			i
Pleasant, rarely	i	i	i	i i	i		İ
ponded	0-2	15-30	6.6-7.3	0	0	0	0
	2-40	25-50	7.4-8.4	0	0	0	0
	40-60	15-35	7.4-8.4	0-5	0	0	0
				1			
175:			1				
Rago, rarely					_		
flooded	'	•	6.6-7.3		0	0	0
	10-47		6.6-8.4		0	0	0
	47-60	10-25	7.9-8.4	5-15	0	0.0-2.0	0
176:	ı İ	1	I I				
Rago, dry,	İ	i	i				i
rarely flooded-	0-10	15-30	6.6-7.3	0	0 1	0	0
							•
	10-47	20-40	6.6-8.4	0-10	0	0	0
	10-47   47-60		6.6-8.4   7.9-8.4		0     0	0 0.0-2.0	0   0

Table 19.--Chemical Properties of the Soils--Continued

		capacity	reaction 	carbonate 	l		adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	1
		į	į	į i	i		i
177:							1
Razor	0-2	20-35	7.9-8.4	0-5	0	0.0-2.0	0-5
	2-15	20-50	7.4-8.4	1-10	0	2.0-8.0	0-10
	15-27 27-37	20-50	7.4-8.4	1-15 	0-5	4.0-8.0	10-15
178:							
Razor, moist	0-2	20-35	7.9-8.4	0-5	0 1	0.0-2.0	l   0-5
	2-15	20-50	7.4-8.4	1-10	0 1	2.0-8.0	0-10
i	15-27	20-50	7.4-8.4	1-15	0-5	4.0-8.0	10-15
į	27-37	j	j	i i	į		j
179:			 	 			
Sampson, rarely							1
flooded	0-7	10-25	6.6-7.3	0	0	0	0
	7-36	10-25	6.6-7.8	0	0	0	0
I	36-60	5.0-20 	7.9-8.4	3-15 	0	0.0-2.0	0
180:		İ	İ	i	i		i
Sampson, dry,		!					!
rarely flooded-	0-7	10-25	6.6-7.3	0	0	0	0
	7-36 36-60	10-25	6.6-7.8	0	0   0	0 0.0-2.0	0
	36-60	5.0-20 	7.9-8.4	3 <b>-1</b> 5 	0   	0.0-2.0	0 
181:		İ	İ	İ	İ		İ
Satanta	0-4	10-20	6.6-7.3		0	0	0
	4-19	10-25	6.1-8.4		0	0	0
l	19-28 28-60	5.0-25   2.0-15	7.4-8.4		0   0	0	0   0
İ				i i	i		i
182:				1			I
Satanta, dry	0-4	10-20	6.6-7.3		0	0	0
	4-19	10-25	6.1-8.4		0	0	0
	19-28	5.0-25	7.4-8.4	:	0	0	0
	28-60	2.0-15	7.4-8.4	1-15 	0	0	0 
183:		Ì	Ī	İ	ĺ		İ
Seldom, rarely							
flooded	0-7	4.0-15	6.6-7.3	0-5	0	0.0-4.0	0
l I	7-15 15-42	4.0-15	7.4-8.4	0-15 5-20	0   0	0.0-4.0 0.0-4.0	0   0
ļ	42-60	4.0-25	7.9-9.0	5-20	0	0.0-4.0	0
104					ļ		ļ
184:   Shingle	0-4	10-25	7.4-7.8	   5-10	0 1	0.0-2.0	I I 0
siiiigie		5.0-20	7.4-7.8		0-5 l	0.0-2.0	1 0
ļ	15-25						
   Midway	0-4	20-35	   7.9-8.4	   0-5	0-1	2.0-4.0	   0-5
MIGWAY	4-15		7.4-8.4		1-15	2.0-8.0	1-15
	15-25						
185:		 	 		I		
Shingle, moist	0-4	10-25	7.4-7.8	5-10	0	0.0-2.0	0
- '	4-15		7.4-8.4		0-5	0.0-2.0	0
į	15-25	j	ļ	i i	į		j
Midway, moist	0-4	20-35	   7.9-8.4	   0-5	0-1	2.0-4.0	   0-5
	4-15	20-35	7.4-8.4		1-15	2.0-8.0	1-15
į	15-25	i	i	i i	i		j

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	   Depth	  Cation-  exchange	   Soil  reaction	  Calcium  carbonate	Gypsum	Salinity	   Sodium  adsorption
	İ	capacity	i	i i			ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm	Ī
	İ	İ	į	j i	İ		i
186:			1				
Sundance	0-8	3.0-10	6.6-7.3	0	0	0	0
	8-17	10-20	6.6-7.3	0-5	0	0	0
	17-28	10-25	7.4-8.4	1-15	0	0.0-2.0	0
	28-84	10-20	7.9-8.4	1-15	0	0.0-2.0	0
			I				
187:			1				
Table Mountain,			1				
rarely flooded-		10-25	6.6-7.3	0	0	0	0
	6-29	10-25	6.6-7.3	0	0	0	0
	29-60	5.0-20	6.6-8.4	0-5	0	0	0
		!	!	!			!
188:		!	!	!			!
Travessilla		5.0-15	7.4-7.8	0-5	0	0	0
	3-13	4.0-15	7.4-8.4	0-5	0	0	0
	13-23		!	ļ			
		!	!	!			!
Rock outcrop	0-60	!	!	ļ			
100		!	!	!			1
189:							
Truckton	0-6	5.0-15	6.6-7.3	0	0	0	0
	6-16   16-60	5.0-15	6.6-7.3	0	0	0 I 0	0
	TP-00	1.0-10	6.6-7.3	0	0	U	0
190:	l I		1			İ	1
Truckton	l   0-6	5.0-15	6.6-7.3	1 0	l 0	l   0	I I 0
II dekton	0-0   6-16	5.0-15	6.6-7.3	1 0	0	0   0	1 0
	16-60	1.0-10	6.6-7.3	1 0	0	l 0	1 0
	10-00 	1	1	1 0	0	,	1
191:	l I	i	i				i
Truckton, dry	l   0-6	5.0-15	6.6-7.3	. 0	0	0	1 0
		5.0-15	6.6-7.3	0	0	0	1 0
	16-60	1.0-10	6.6-7.3	0	0	0	0
	i	i	i	i i			i
192:	İ	i	i	i i		İ	i
Truckton, dry	0-6	5.0-15	6.6-7.3	0	0	0	0
	6-16	5.0-15	6.6-7.3	0	0	0	0
	16-60	1.0-10	6.6-7.3	0	0	0	0
			1				
193:		1	1	1			1
Valent	0-3	1.0-10	6.6-7.3	0	0	0	0
	3-60	0.0-5.0	6.6-7.8	0	0	0	0
			I				
194:		1	1				
Valent	'		6.6-7.3		0	0	0
	3-60	0.0-5.0	6.6-7.8	0	0	0	0
		!	!	!			!
Bijou			6.6-7.3		0	0	0
			6.6-7.8		0	0	0
	'		6.6-7.8		0	0	0
	36-60	2.0-5.0	6.6-7.8	0	0	0	0
195:	l I	1	1	1		[ 	
Valent	l 0 3	l 1 0 10	1 6 6 7 3	1 0		l	1
valent	'		6.6-7.3		0	0	0
	1 3-60 I	1 0.0-5.0	6.6-7.8	0	0	0	0
Vona	l l 0.7	1 2 0 10	1 6 6 7 3	1 0		l	1
vona	'		6.6-7.3		0	0   0	0
			6.6-8.4		0	0   0	0
			7.9-8.4		0	)   0	0   0
	<u>~</u> 3-00	10-10	/.5-0.4	1 2-12			
	ı	I	I	1		I	I

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-  exchange  capacity	Soil  reaction	Calcium  carbonate	Gypsum	Salinity	Sodium  adsorption   ratio
	In	meq/100g	l bH	Pct	Pct	mmhos/cm	I
100							ļ
196:	l l 0-3	1.0-10			l I l 0 I	0	   0
Valent	0-3   3-60	0.0-5.0	6.6-7.8	0   0	0     0	0	1 0
	3 00 		0.0 7.0				
Vonid	0-6	3.0-10	6.6-7.3	. 0	0	0	j o
İ	6-34	5.0-15	6.6-8.4	0-10	0	0	0
	34-52	2.0-10	7.9-8.4	5-15	0	0	0
	52-60	1.0-10	7.9-8.4	5-15	0	0	0
				!			!
197:	l l 0-7	3.0-10	6.6-7.3		   0	0	
Vona	0-7   7-16	5.0-10	6.6-8.4		0     0	0	0   0
	16-25	2.0-10	7.9-8.4		0 1	0	1 0
	25-60	1.0-10	7.9-8.4		0 1	0	0
	İ	İ	į	j i	i i		i
198:	l			I	İ		1
Vona	0-7	5.0-15	6.6-7.3		0	0	0
	7-16	5.0-15	6.6-8.4		0	0	0
	16-25	2.0-10	7.9-8.4	:	0	0	0
	25-60 	1.0-10	7.9-8.4	5-15	0	0	0
199:	l I	 	 				1
Vona	l l 0-7	5.0-15	6.6-7.3	0		0	0
	7-16	5.0-15	6.6-8.4		0 1	0	0
	16-25	2.0-10	7.9-8.4	5-15	0	0	j o
	25-60	1.0-10	7.9-8.4	5-15	0	0	0
				1			1
200:							
Vona	0-7	5.0-15	6.6-7.3		0	0	0
	7-16   16-25	5.0-15   2.0-10	6.6-8.4   7.9-8.4		0     0	0	0   0
	25-60	1.0-10	7.9-8.4	5-15	0     0	0	1 0
	25 00			1			
Karval	0-5	2.0-10	5.6-6.0	0-2	0	0	j o
İ	5-40	1.0-5.0	6.6-8.4	2-5	0	0	0
	40-60	1.0-5.0	6.6-8.4	0-5	0	0.0-2.0	0
				!			
Midway, moist		20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15   15-25	20-35	/.4-8.4	5-15 	1-15   	2.0-8.0	1-15
	15-25 	 			 		
201:	İ	i	i	i	i i		i
Vona	0-7	5.0-15	6.6-7.3	0	0	0	0
	7-16	5.0-15	6.6-8.4	0-10	0	0	0
	'		7.9-8.4		0	0	0
	25-60	1.0-10	7.9-8.4	5-15	0	0	0
Widness maint		20 35	7004			2040	
Midway, moist	0-4   4-15		7.9-8.4		0-1     1-15	2.0-4.0 2.0-8.0	0-5   1-15
	15-25	•			<del></del>		
	-5 -5		i				i
202:	İ	i	i	i i	i		i
Vona	0-7	5.0-15	6.6-7.3	0	0	0	0
ĺ			6.6-8.4		0	0	0
	'	2.0-10	7.9-8.4		0	0	0
	25-60	1.0-10	7.9-8.4	5-15	0	0	0
Calder	l 	1 4 0 15				0.0.1.0	
Seldom	'		6.6-7.3   7.4-8.4		0     0	0.0-4.0 0.0-4.0	0   0
		3.0-15	7.9-9.6		0     0	0.0-4.0	0
		4.0-25	7.9-9.0		0 1	0.0-4.0	0
		1	1				1

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-  exchange  capacity	reaction	Calcium  carbonate	Gypsum	Salinity	Sodium  adsorption   ratio
	In	meq/100g	PH	Pct	Pct	mmhos/cm	İ
İ					l I		I
203:		!					!
Vonid	0-6	3.0-10	6.6-7.3	:	0	0	0
	6-34	5.0-15	6.6-8.4	0-10	0	0	0
	34-52 52-60	2.0-10	7.9-8.4	5-15 5-15	0     0	0	0   0
	32-60	1 1.0-10	/.5-0.4	1 3-13		U	1
204:		i	İ	i			i
Vonid	0-6	5.0-15	6.6-7.3	0	0	0	i o
i	6-34	5.0-15	6.6-8.4	0-10	0	0	j o
İ	34-52	2.0-10	7.9-8.4	5-15	0	0	0
1	52-60	1.0-10	7.9-8.4	5-15	0	0	0
I							I
205:		1					ļ
Vonid	0-6	5.0-15	6.6-7.3		0	0	0
	6-34		6.6-8.4	:	0	0	0
		2.0-10		5-15	0	0	0
	52-60	1.0-10	7.9-8.4	5-15	0	U	0
206:			 				
Vonid	0-6	5.0-15	6.6-7.3	0		0	i o
	6-34	5.0-15	6.6-8.4		0 1	0	i o
i	34-52	2.0-10	7.9-8.4	5-15	0	0	j o
j	52-60	1.0-10	7.9-8.4	5-15	0	0	0
Ì		Ì	İ	İ	İ		Ì
Karval	0-5	2.0-10	5.6-6.0	0-2	0	0	0
I	5-40	1.0-5.0	6.6-8.4	2-5	0	0	0
	40-60	1.0-5.0	6.6-8.4	0-5	0	0.0-2.0	0
Midway	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
	4-15 15-25	20-35	7.4-8.4	5-15 	1-15   	2.0-8.0	1-15
	15-25						
207:		1	 				i
Vonid	0-6	5.0-15	6.6-7.3	0		0	0
	6-34	5.0-15	6.6-8.4	0-10	0 1	0	i o
	34-52	2.0-10	:	5-15	0	0	0
i	52-60	1.0-10	7.9-8.4	5-15	0	0	0
Ì		Ì	İ	İ	İ		Ì
Midway	0-4	20-35	7.9-8.4	0-5	0-1	2.0-4.0	0-5
I	4-15	20-35	7.4-8.4	5-15	1-15	2.0-8.0	1-15
	15-25	!		ļ			
200				!			1
208:     Vonid	l I 0-6	5.0-15	6 6 7 3	1 0	   0	0	l   0
vonia		5.0-15			0 1	0	1 0
		2.0-10	•		0     0	0	l 0
		1.0-10			0 1	0	1 0
	== ==			1		ŭ	i
Seldom	0-7	4.0-15	6.6-7.3	0-5	0	0.0-4.0	i o
i		•	7.4-8.4		0	0.0-4.0	0
i		3.0-15	7.9-9.6		0	0.0-4.0	j o
j	42-60	4.0-25	7.9-9.0	5-20	0	0.0-4.0	0
İ							1
209:		!			ļ I		ļ.
Wages	0-5	•	6.6-7.3		0	0	0
	5-12		7.4-7.8		0	0	0
	12-17	•	7.9-8.4		0	0	0
	17-60	4.0-20	7.4-8.4	5-15	0	0	1 0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol   and soil name	Depth	Cation-  exchange  capacity		Calcium  carbonate	Gypsum	Salinity	Sodium  adsorption   ratio
	In	meq/100g		Pct	Pct	mmhos/cm	İ
i		1		I	ı i		1
210:							ļ
Wages	0-4	10-20	6.6-7.3		0	0	0
ļ	4-10		7.4-7.8		0	0	0
ļ		5.0-25	7.9-8.4		0	0.0-2.0	0
l I	35-60	4.0-15	7.4-8.4	4-15	0	0.0-2.0	0
211:		i	i				i
Wages, dry	0-4	10-20	6.6-7.3	0	0	0	0
I	4-10	10-25	7.4-7.8	0-5	0	0	0
I	10-35	5.0-25	7.9-8.4	4-15	0	0.0-2.0	0
!	35-60	4.0-15	7.4-8.4	4-15	0	0.0-2.0	0
212:					 		
Wages	0-4	10-20	6.6-7.3	0	0	0	0
i	4-10	10-25	7.4-7.8	0-5	0	0	j o
i	10-35	5.0-25	7.9-8.4		0	0.0-2.0	,   0
į	35-60	4.0-15	7.4-8.4	4-15	0	0.0-2.0	0
Vorme 1	0 -					^	
Karval	0-5 5-40	2.0-10	5.6-6.0		0     0	0	0   0
l I		1.0-5.0			0     0	0.0-2.0	0   0
 	10-00			0-3		0.0-2.0	
213:		İ	İ	į į	i i		i
Weld	0-4	15-20	6.6-7.3	0	0	0	0
I	4-19		6.6-7.8		0	0	0
	19-44		7.4-8.4		0	0	0
ļ	44-60	10-20	7.9-9.0	5-15	0	0	0
214:		 	 				
Weld, dry	0-4	15-20	6.6-7.3	0	0	0	0
i	4-19	20-40	6.6-7.8	0	0	0	j o
I	19-44	15-30	7.4-8.4	5-15	0	0	0
ļ.	44-60	10-20	7.9-9.0	5-15	0	0	0
215:							
Wiley	0-4	5.0-20	7.9-8.4	0-10		0	I I 0
	4-23		7.4-9.0		0	0	1 0
i		5.0-15	7.9-9.0		0	0	0
į		İ	İ	į į	i i		i
216:						•	
Wiley	0-4	5.0-20	7.9-8.4		0	0	0
l I		5.0-20   5.0-15	7.4-9.0		0     0	0	0   0
l I	23-00	1 2.0-12	1.5-3.0	2-12	,	U	0
217:		i	i	į i	i		i
Wilid	0-3	5.0-20	7.9-8.4	0-10	0	0	0
I	3-21	5.0-20	7.4-9.0	5-15	0	0	0
!	21-60	5.0-15	7.9-9.0	5-15	0	0	0
218:							l I
Water.			İ				
į		į	į	į	i		i
219:			1				
Gravel pits	0-5					0	
ļ	5-60				<u> </u>	0	
   220:		1	1				1
Access denied.		1	1				
		1	1	1	ı I		1

Table 20.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol   and soil name	Depth In	Kind	İ		Concrete  Concrete  High
Apishapa, rarely ponded    102:   Arvada	In				 
Apishapa, rarely ponded    102:   Arvada	 			      High 	        High 
Apishapa, rarely ponded    102:   Arvada	   			    High 	    High 
ponded    102:     Arvada	   			  High   	  High 
102:   Arvada	   				
Arvada	İ		Low	l	
į	İ		Low		1
103.			1	High	High
	j		İ	! 	Ì
Ascalon			Moderate	Moderate	Low
104:					
Ascalon	i		  Moderate	  Moderate	Low
į	i		İ		į
105:					
Ascalon			Moderate	Moderate 	Low
106:	i		i		i
Ascalon, dry			Moderate	Moderate	Low
107:			1	l i	1
Ascalon, dry			  Moderate	  Moderate	Low
į	i		İ	İ	İ
108:			Madamaka	  Wadamata	
Ascalon, dry			Moderate	Moderate 	Low
109:	i		İ		i
Ascalon			Moderate	Moderate	Low
Haxtun			  Moderate	  Moderate	Low
	i				
110:			1		[
Ascalon, dry			Moderate	Moderate 	Low
Haxtun, dry	i		Moderate	  Moderate	Low
Į.	ļ		Į.	l	Į.
111:   Bacid			Low	  High	Low
Baciu					
112:	Ì		Ì	ĺ	Ì
Bankard,					
occasionally flooded			Low	  Moderate	Low
į	i		İ	İ	İ
Glenberg,					1
occasionally   flooded			Low	  Moderate	Low
į	i		į	İ	i
113:					
Bijou			Low	Moderate 	Low
114:	i		i	İ	į
Bijou, moist			Low	Moderate	Low
115:			1	 	1
Bijou, moist			Low	  Moderate	Low
į	į		ļ.		ļ.
116:			Low	  Moderate	Low
Blakeland			Low	  moderate	Low
117:	i		İ		İ
Bresser			Moderate	Moderate	Low
I	ı		I	l	I

Table 20.--Soil Features--Continued

Map symbol	Res	trictive layer	Potential   Risk of corrosion			
and soil name		I	frost action		I	
	Depth	Kind		steel	Concrete	
	In			 		
118:		 	 	 	l I	
Campo			Low	  High	Low	
			I		l	
119:			ļ.		<u> </u>	
Canyon	10-20	Bedrock   (paralithic)	Low	High 	Low	
		(paralithic)	 	 	I I	
Rock outcrop	0-0	  Bedrock (lithic)	None			
			I		ĺ	
120:						
Colby			Low	Moderate	Low	
121:		 	! !	 	! 	
Colby		·	Low	Moderate	Low	
İ		ĺ	ĺ		ĺ	
122:		!	!		<u> </u>	
Colby			Low	Moderate	Low	
Weld		l 	Low	  High	  Low	
		<u> </u>				
123:		İ	İ	İ	İ	
Firstview		ļ	Low	High	High	
104						
124: Fort Collins		 	Low	  High	  Low	
TOTE COTTING		 			<u>                                   </u>	
125:		İ	İ	İ	İ	
Fort Collins			Low	High	Low	
106						
126: Fort Collins		l 	Low	  High	  Low	
1010 00111110		<u> </u>				
Karval			Low	Moderate	Low	
		!	!		<u> </u>	
127: Fort Collins		 	Low	  High	  Low	
FOIC COIIIIS		 	I TOW	 	I TOW	
Platner		i	Low	  Moderate	Low	
			I		ĺ	
128:		!	!		!	
Fort Collins			Low	High 	Low	
Razor, moist	20-40	  Bedrock	Low	  High	  High	
,			 			
İ		ĺ	ĺ	ĺ	ĺ	
129:						
Fort			Low	High 	Low	
130:		 	! 	 	1 	
Fort			Low	।  High	  Low	
j		İ	İ	l	İ	
131:		!	ļ		!	
Fort			Low	High	Low	
Karval		 	Low	  Moderate	  Low	
132:		İ				
Fort			Low	High	Low	
			ļ			
Razor	20-40		Low	High 	High 	
		(paralithic) 	i I	! 	ı İ	
133:		į	i	İ	i	
Haversid, rarely		l	I	l	l	
flooded			Low	High	Low	
		I	I	l	I	

Table 20.--Soil Features--Continued

Map symbol	Res	trictive layer	Potential	Risk of o	of corrosion			
and soil name		I	frost action		I			
did boll ildiio	Depth	Kind		steel	Concrete			
		KING	l	BCCC1	CONCIECE			
	In	!	!					
134:								
Haverson, rarely								
flooded			Low	Moderate	Low			
			I					
135:		i	i	i	İ			
Haxtun		i	Moderate	Moderate	Low			
nancan		l I	I	I	1			
126		 	 	l i	l i			
136:		  -		_	l			
Haxtun, dry			Moderate	Moderate	Low			
137:								
Haxtun, dry			Moderate	Moderate	Low			
			I					
Olney		i	Low	Low	Low			
		i I	i		İ			
138:	 	ı İ	ı I	l I	ı I			
		 	 	 	  -			
Haxtun			Moderate	Moderate	Low			
Olnest			Moderate	High	Low			
139:		İ	İ		l			
Keith		i	Moderate	Moderate	Low			
		i I	I	 	<del></del>			
140-		l I	l I	i	l I			
140:			 		  -			
Keith			Moderate	Moderate	Low			
141:								
Kim			Low	Moderate	Low			
			I					
142:		i	i	i	i			
Kim		i	Low	Moderate	Low			
KIM		I I	1	I	1			
142.		 	 	l i	l i			
143:		  -	!		l			
Kimst			Low	High	Low			
144:								
Kimst			Low	High	Low			
		İ	İ		İ			
145:		i i	i	l	i i			
Las Animas,		i i	i		i i			
occasionally		! !	! !	l I	I I			
_		l i	   ***1-	   ***	   ***			
flooded		!	High	High	High			
146:								
Limon, rarely								
flooded			Low	High	Moderate			
İ		I	1	l i	l			
147:		I	i		I			
Limon, moist,		i i	i		i i			
		l 	Low	l Luigh	  Moderate			
rarely flooded-			I TOW	High	l moderate			
					l			
148:					l			
Manzanola			Low	High	High			
149:								
Manzanst, rarely		I	I	l i	I			
flooded		i	Low	High	Low			
	' 	i i	i ***	, - <u>-</u>	, *** 			
150:	 	ı İ	ı I		ı I			
	 	I I	   <del> </del>	   ***	   •			
Manzanst		·	Low	High	Low			
		!	!		l :			
151:		I	l	l l	l			
Midway	6-20	Bedrock	Low	High	Low			
		(paralithic)						
İ		I	I	l i	l			
'				,				

Table 20.--Soil Features--Continued

Map symbol	Res	trictive layer	Potential	Risk of corrosion		
and soil name	į		frost action	Uncoated	I	
	Depth	Kind	L	steel	Concrete	
	In		I		1	
			1		[	
152:						
Midway, moist			Low	High	Low	
153:		(paralithic)				
Midway	6-20	  Bedrock	Low	  High	  Low	
Midway		paralithic)	I IIOW	l mråm	I IOW	
		(F4141101110)	İ	i I	İ	
Razor	20-40	Bedrock	Low	High	High	
		(paralithic)	İ	İ	İ	
			I	l	I	
154:			I	l	I	
Midway, moist	6-20	:	Low	High	Low	
		(paralithic)		ļ		
B	00.40		 			
Razor, moist		Bedrock   (paralithic)	Low	High 	High	
	 	(paraffichic)	! !	I I	! !	
155:		! 	i I	! 	İ	
Midway	6-20	Bedrock	Low	  High	Low	
-		(paralithic)	i	i	İ	
j		ĺ	ĺ	ĺ	ĺ	
Rock outcrop	0-0	Bedrock	None			
		(paralithic)	I			
			1			
156:						
Midway, moist	6-20	:	Low	High	Low	
		(paralithic)				
Rock outcrop,		l I	I I	l I	l I	
moist	0-0	  Bedrock	  None	l I	I I	
		(paralithic)		i I	İ	
		İ	i	İ	İ	
157:		ĺ	ĺ	ĺ	ĺ	
Nunn			Moderate	High	Low	
			1			
158:						
Nunn			Moderate	High	Low	
Sampson, rarely		l I	I I	l I	l I	
flooded		I	Moderate	  High	Low	
110000		! [			1	
159:		İ	i	İ	i	
Nunn, dry		i	Moderate	High	Low	
			1		l	
Sampson, dry,			I			
rarely flooded-			Moderate	High	Low	
160:						
Olnest			Moderate	High	Low	
161:	 	 	1	l I	! !	
Olnest		! 	Moderate	  High	Low	
		i I		5 	 	
162:	İ	İ	i	İ	İ	
Olnest		i	Moderate	High	Low	
İ		l	I	l	l	
163:		l	I	l	l	
Olnest		ļ	Moderate	High	Low	
1.54			1			
164:		 		   T		
Olney		 	Low	Low	Low	
165:	 	1 	i	ı 	ı İ	
Olney			Low	  Low	Low	
- <u>-</u>		i i	i	i İ	İ	
'		-	-	-	-	

Table 20.--Soil Features--Continued

	Res	trictive layer	D-1	ial   Risk of corrosion			
Map symbol and soil name	100		Potential  frost action	1			
	Depth	Kind		Uncoated steel	Concrete		
	In	l	1	Ī	l		
		!	[	l	ļ		
166:							
Olney		 	Low	Low	Low		
167:		! 	! 	 	I I		
Olney			Low	Low	Low		
		İ	İ	İ	İ		
168:			I	l	l		
Olney			Low	Low	Low		
Midway	   6-20	  Bedrock	  Toru	luiah	Low		
MIGWAY	0-20	(paralithic)	Low 	High 	I TOW		
	 	(pararremie)	İ	! 	! 		
169:		İ	i	İ	İ		
Otero			Low	High	Low		
			1				
170:			 		 		
Oterodry		 	Low	High 	Low		
171:	[ [	I I	 	I I	I I		
Oterodry		 	Low	  High	  Low		
•		İ	İ	İ	İ		
172:		I	I	l	I		
Platner			Low	Moderate	Low		
		<u> </u>	!		!		
173:							
Platner		 	Low	Moderate	Low		
Ascalon		l I	  Moderate	  Moderate	  Low		
115041011		i I					
174:		İ	i	İ	İ		
Pleasant, rarely		ĺ	İ	ĺ	ĺ		
ponded			Low	High	Low		
					!		
175:		 	 	l I	l i		
Rago, rarely flooded		l I	Low	  High	  Low		
2200404		i I	1				
176:		İ	İ	İ	İ		
Rago, dry,		ĺ	İ	ĺ	ĺ		
rarely flooded-			Low	High	Low		
			!		<u> </u>		
177:	00.40			 			
Razor	20-40 	Bedrock   (paralithic)	Low 	High 	High 		
	<u> </u> 	(pararremie)	i	! 	i I		
178:		İ	i	İ	İ		
Razor, moist	20-40	Bedrock	Low	High	High		
		(paralithic)	I	l	l		
			ļ.		<u> </u>		
179:					l L		
Sampson, rarely flooded		l I	  Moderate	  High	  Low		
	<b></b>	 		 			
180:		i İ	i	İ	i		
Sampson, dry,		İ	İ		İ		
rarely flooded-			Moderate	High	Low		
		<u> </u>	!	l	<u> </u>		
181:			 		 		
Satanta		 	Moderate	High 	Low		
182:	] 	I I	I I	I I	I I		
Satanta, dry		 	  Moderate	  High	  Low		
		i İ			İ		
'	'		•				

Table 20.--Soil Features--Continued

			Potential   Risk of corrosion				
Map symbol	Res	trictive layer	Potential	-	corrosion		
and soil name	   Depth	   Kind	frost action 	Uncoated steel	   Concrete		
	In		l	l			
183: Seldom, rarely flooded		 	      Low	        High	      Moderate		
184: Shingle	     10-20 	    Bedrock   (paralithic)	    Low 	    Moderate 	    Low 		
Midway		  Bedrock   (paralithic) 	  Low 	  High   	  Low 		
185: Shingle, moist	   10-20 	  Bedrock   (paralithic)	  Low 	    Moderate 	  Low 		
Midway, moist	   6-20 	  Bedrock   (paralithic) 	  Low 	  High   	  Low 		
186: Sundance		 	    Low 	    High 	    Low 		
187: Table Mountain, rarely flooded-	   	   	    Moderate 	    High 	    Low 		
188: Travessilla	   4-20 	  Bedrock (lithic) 	  Low 	  Moderate 	  Low 		
Rock outcrop	0-0	  Bedrock (lithic)	None				
189: Truckton		     	    Moderate 	    Moderate 	    Moderate 		
190: Truckton	   	   	  Moderate 	  Moderate 	  Moderate 		
191: Truckton, dry	 	   	  Moderate 	  Moderate 	  Moderate 		
192: Truckton, dry	   	   	  Moderate 	  Moderate 	  Moderate 		
193: Valent	   	   	  Low 	  Moderate 	  Low 		
194: Valent	   	   	  Low 	  Moderate 	  Low 		
Bijou	 	 	Low 	Moderate 	Low 		
195: Valent	   	   	  Low 	  Moderate 	  Low 		
Vona	 	 	  Low 	High 	Low		
196: Valent	   	   	  Low 	  Moderate 	  Low 		
Vonid	 	 	Low	High 	Low		
197: Vona	   	   	  Low 	    High 	  Low 		

Table 20.--Soil Features--Continued

Map symbol	Rest	trictive layer	Potential	Risk of o	corrosion
and soil name			frost action	Uncoated	l
	Depth	Kind		steel	Concrete
	In				
198:					
Vona			Low	High	Low
199:					
Vona			Low	High	Low
		  -			
200:			  -		  -
Vona			Low	High	Low
Karval		l l	  Low	  Moderate	   T ===
Rai vai		 	I TOW	Moderace	Low
Midway, moist	6-20	  Bedrock	  Low	ı  High	Low
midway, moist	0 20	(paralithic)	<u>1</u> 0#		<u>1</u> 20#
		(pararrenie)	! 	! 	! 
201:		l İ	i İ	i İ	! 
Vona			Low	  High	Low
				İ	
Midway, moist	6-20	Bedrock	Low	High	Low
	İ	(paralithic)	İ	İ	İ
		İ	İ	İ	İ
202:		İ	İ	İ	İ
Vona			Low	High	Low
Seldom			Low	High	Moderate
203:			l		
Vonid			Low	High	Low
204:					
Vonid			Low	High	Low
205:			  -		  -
Vonid			Low	High 	Low
206:		l i	l I	l i	l I
Vonid		 	  Low	  High	  Low
		l İ	 	9	 
Karval			Low	Moderate	Low
Midway	6-20	Bedrock	Low	High	Low
	İ	(paralithic)	İ	İ	İ
		İ	İ		İ
207:					
Vonid			Low	High	Low
Midway	6-20	Bedrock	Low	High	Low
		(paralithic)			
208:			l		
Vonid			Low	High	Low
			  -		
Seldom			Low	High	Moderate
209:		l i	l I	l i	l i
Wages		l 	  Moderate	  Moderate	  Low
надев		 	Moderace	Moderace 	l TOW
210:		 	! 		! 
Wages			  Moderate	  High	  Low
-3				, - <u>-</u>	
211:		' 	i I	i I	
Wages, dry			  Moderate	  High	Low
- · -				 	
212:			l		l
Wages			Moderate	High	Low
			l	l	l

Table 20.--Soil Features--Continued

Map symbol	Restr	rictive layer	Potential	Risk of	corrosion
and soil name			frost action	Uncoated	1
	Depth	Kind		steel	Concrete
!	In		ļ		
212:			l I	 	 
Karval			Low	Moderate	Low
213:				 	
Weld			Low	High	Low
214:				! 	
Weld, dry			Low	High	Low
215:			 	 	
Wiley			Moderate	High	Low
 216:			l I	 	 
Wiley			Moderate	High	Low
   217:			l I	 	 
Wilid			Moderate	High	Low
218:			I I	 	
Water.	į		ļ		
 219:				 	
Gravel pits	j		None		
   220				 	 
Access denied.	i i		i	İ	i

Table 21.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

	Ī	I	Water	table	l	Ponding		Floor	ding
Map symbol and soil name	Hydro-  logic  group	Month   	Upper   limit				Frequency   	•	Frequency
	   	   	   Ft 	   Ft	   Ft	   	   	   	   
101: Apishapa, rarely ponded	     D	   	   	   	   	   	   	   	   
		April	0.0	0.0-1.0	0.0-3.0		Rare		None
		May			0.0-3.0		Rare		None
		June	0.0	0.0-1.0	0.0-3.0		Rare		None
		July		•	0.0-3.0		Rare		None
		August		•	0.0-3.0		Rare		None
	!	September	0.0	0.0-1.0	0.0-3.0		Rare	ļ	None
102:		 			1	 	 	 	 
Arvada	   D	! !	I I	1		l I	! !	I I	I I
AI Vada	1	  Jan-Dec	! !	¦		 	None	l	None
	1	l		 		 	None	 	None
103:	i	i	i	i	i	i I	i	i I	i I
Ascalon	В	i	i	i	i	i	i	i	i
	i	Jan-Dec	i	i	i	i	None	i	None
	i	i	İ	i	i	İ	İ	İ	İ
104:	i	İ	į	į	į	İ	İ	İ	İ
Ascalon	В	ĺ	İ	İ		l	İ	ĺ	l
		Jan-Dec					None		None
	İ	ĺ	İ	İ	İ	l	ĺ	ĺ	l
105:	İ	ĺ	İ	İ		l	ĺ	ĺ	l
Ascalon	В	ĺ	İ	İ		l	İ	ĺ	l
		Jan-Dec					None		None
	İ	ĺ	İ	İ	İ	l	ĺ	ĺ	l
106:		1					I		l
Ascalon, dry	В .						1		
		Jan-Dec					None		None
		1					1		l
107:		1				l	1		l
Ascalon, dry	в					l	1		l
		Jan-Dec					None		None
		1					I		
108:		1					I		
Ascalon, dry	В								l
		Jan-Dec					None		None
		I				l	I		l
109:		1					[		
Ascalon	В	1							
		Jan-Dec					None		None
	!	!		!			!	<u> </u>	
Haxtun	B		!	!			!	<u> </u>	<u> </u>
	!	Jan-Dec					None	ļ	None
	!	!		!			!		ļ
110:	-	!		!			!		ļ
Ascalon, dry	В		!	!					
	1	Jan-Dec					None		None
**************************************	-	!	I	1		 	1	l L	l
Haxtun, dry	B		I	1		 		l L	l
	1	Jan-Dec					None		None
	1	I	I	1			1		
111:		I	I	1			1		
Bacid	·  C		I	1		 		l L	l
	1	Jan-Dec					None		None
	1	I	1	I		l	I	l	l

Table 21.--Water Features--Continued

	I		Water	table		Ponding		Floor	ding
Map symbol	  Hydro-	Month	Upper		Surface	Duration	Frequency	Duration	Frequency
and soil name	logic	 	limit			 		 	
	group	i	i	i	depth	İ	i	i	İ
	<u>i</u>	<u>.</u>	<u>i</u>	<u>i</u>	<u>i</u>	<u> </u>	<u>i</u>	<u> </u>	İ
		I	Ft	Ft	Ft	l	I	I	l
		I				l	1	1	l
112:		I				l	I	I	l
Bankard, occasionally							[		
flooded	·  A		!	!	!		!		
	:	April					None	Brief	Occasional
		May					None	Brief Brief	Occasional   Occasional
	•	June  July	 		 	 	None None	Brief	Occasional
	•	August				 	None	Brief	Occasional
	i	September		 		 	None	Brief	Occasional
	i		i	i	i	! 		22202	
Glenberg, occasionaly	i	İ	i	i	i	i I	i	İ	i I
flooded	B	i	i	i	i	İ	i	i	İ
	İ	April	i	i	i	i	None	Very brief	Occasional
		May					None	Very brief	Occasional
		June					None	Very brief	Occasional
		July					None	Very brief	Occasional
		August					None	Very brief	Occasional
		September					None	Very brief	Occasional
	!			!		ļ	!		
113:	! _					l			
Bijou	·  B	   Tan Dag	1	 		l I	Name	1	   Nome
		Jan-Dec				 	None		None
114:	<u> </u>	! !	 	! !		I I	i	! !	I I
Bijou, moist	B	i	i	i	i	i İ	i	i	i I
	i	Jan-Dec	i	i	i		None	i	None
	i	İ	i	i	į i	İ	İ	İ	i İ
115:	Ì	ĺ	İ	İ		l	ĺ	ĺ	ĺ
Bijou, moist	-  в						1		
		Jan-Dec					None		None
		l				l	I		l
116:	!	!		!			!	!	
Blakeland	·  A			!					
	!	Jan-Dec					None		None
117.	1	1	1	 		 	I I	1	 
117: Bresser	  -   B	I I		 		l I	I I	I I	l I
DI 65561	1	  Jan-Dec	 	 	 	I I	None	! 	   None
	i	1	i	i	i	i İ	1	i	110110 
118:	i	İ	i	i	i	i I	i	İ	i I
Campo	·ic	i	i	i	i	İ	i	i	İ
	İ	Jan-Dec	j	i		i	None	i	None
		I		1			I		
119:		I				l	1	1	l
Canyon	-  D	l				l	I		l
	!	Jan-Dec					None	ļ	None
	-			!			!		
Rock outcrop	·  D		!			l			l 
		Jan-Dec					None		None
120:		I I	1	 	1	l I	I I	I I	l I
Colby	 -  B	! !	 	! !		I I	i	! !	I I
33227	-	Jan-Dec	i	i	i	I	None	i	None
	i		i	i	i	i İ		i	
121:	İ	İ	İ	į	į		į	İ	
Colby	·  B	İ	İ	İ	İ		İ	İ	İ
		Jan-Dec					None	i	None
								l	l
122:								I	l
Colby	·  B						Į.	!	l
	!	Jan-Dec					None	ļ	None
	I	I	I	I	I	l	I	I	I

Table 21.--Water Features--Continued

			Water	table		Ponding		Floo	ding
and soil name	Hydro-  logic  group	Month   		Lower limit	Surface    water     depth	Duration	Frequency     	Duration	Frequency   
		<u> </u> 	Ft	Ft	Ft				
122: Weld	     c 	      Jan-Dec	     		     		     None		     None
123: Firstview	:	      Jan-Dec 	     		     		       None		       None 
124: Fort Collins	:	      Jan-Dec 	   		   		     None		     None
125: Fort Collins	:	    Jan-Dec 	   		    		     None	   	     None
126: Fort Collins	:	    Jan-Dec 	     	 		   	     None	   	     None
Karval	:	    Jan-Dec 	 		 		   None	 	   None
127: Fort Collins	:	      Jan-Dec	   		 		     None		     None
Platner	:	    Jan-Dec 	   		       		     None		     None 
128: Fort Collins	:	    Jan-Dec 	     	   	    		     None   	   	     None 
Razor, moist		  Jan-Dec 	 		     		   None		   None 
129: Fort	   B 	    Jan-Dec 	   		 		     None	   	     None
130: Fort	:	    Jan-Dec 	   		 		     None	   	     None
131: Fort	     B 	    Jan-Dec 	   		   		     None		     None
Karval	A   A 	    Jan-Dec 	   		   		 	   	     None 
132: Fort	     B 	      Jan-Dec 	   		     		     None		     None
Razor	c   c	    Jan-Dec 	   		   		 		     None

Table 21.--Water Features--Continued

	I		Water	table		Ponding		Floo	ding
Map symbol and soil name	Hydro-  logic  group	Month   	Upper   limit	Lower   limit 	Surface   water   depth		Frequency   	Duration	Frequency   
133:	     	     	Ft   Ft 	Ft   Ft 	Ft   		     	     	     
Haversid, rarely flooded	:	  May	 	 	 	 	   None	 	   Rare
	:	June  July	 			 	None   None	 	Rare
	:	August					None		Rare
134: Haverson, rarely flooded	     B	   	   	   	   	 	   	   	   
	:	April					None		Rare
	:	May  June	 	 		 	None   None	 	Rare Rare
	:	July	i	i			None		Rare
	İ	August	i	i	i		None	i	Rare
		September					None	 	Rare
135: Haxtun	     B 	      Jan-Dec	     	     	     	   	     None	     	     None
136: Haxtun, dry	       B	    -  -	     	   	 		 	 	 
137: Haxtun, dry	       B	Jan-Dec     	     	     	     	   	None     	   	None     
,,		  Jan-Dec 					None	 	None
Olney	   B 	    Jan-Dec 	;   	;   	   		   None 	   	   None
138: Haxtun	   B 	    Jan-Dec	   	   	   		     None	 	     None
Olnest	   B 	    Jan-Dec 	     	     	   	   	     None 	     	     None 
139: Keith	   B 	    Jan-Dec 	   	   	   	   	     None	   	     None
140: Keith	   B 	    Jan-Dec	   	   	   		     None		     None
141: Kim	     B 	      Jan-Dec	     	     	     		     None	     	       None
142: Kim	     B 	      Jan-Dec	     	     	     		       None	     	       None
143: Kimst	     B 	      Jan-Dec	     	     	     		       None	     	       None
144: Kimst	     B 	      Jan-Dec 	       	       	     		     None 	     	     None 

Table 21.--Water Features--Continued

		 I	Water	table		Ponding		Floo	dina
Map symbol	  Hydro-	Month	Upper		Surface		Frequency		Frequency
and soil name	logic	İ	limit	•		İ	i	İ	i
	group	İ	į	İ	depth	İ	İ		į
	<u> </u>	l	   Ft	Ft	   Ft	<u> </u>	l	<u> </u>	l
	i	İ			i	İ	İ	 	İ
145:							I		1
Las Animas, occasionally			!			l	!		
flooded	'	  April		l I		l I	   None	   Brief	Occasional
	•	May	1.0-3.0			 	None	Brief	Occasional
		June	1.0-3.0	•			None	Brief	Occasional
		July	1.0-3.0	•	j	i	None	Brief	Occasional
		August					None	Brief	Occasional
	!	September					None	Brief	Occasional
146:	1	 	 	l I	 	l I	 	 	 
Limon, rarely flooded	· C	İ	i	İ	i	İ	İ	İ	i
		May					None		Rare
		June					None		Rare
		July					None		Rare
		August					None		Rare
147:		 		l I		 	 	 	
Limon, moist, rarely	i	İ	i	İ	i	<u> </u>	i	 	i
flooded	· C	İ	i	İ	į i	İ	İ	İ	į
	İ	April					None		Rare
		May					None		Rare
		June					None		Rare
		July				ļ	None		Rare
		August			 	 	None	 	Rare
		September		 		 	None	 	Rare
148:	i	! 	i	l İ	i	 	İ	! 	İ
Manzanola	ď	i	i	İ	i	İ	i	İ	i
	į	Jan-Dec	j	i	j		None	i	None
							I		I
149:	!		!	l			!	l	!
Manzanst, rarely flooded	•				!				
	•	April  May		 	 	 	None   None	 	Rare Rare
		May   June		 		 	None	 	Rare
		July	i	' 	i	' 	None	 	Rare
		August	i	i	i		None		Rare
	•	September	j	i	j	i	None	i	Rare
	1		1	l			1	ļ	Į.
150:									
Manzanst	·  C	   Tan Dag		  -		 	Name	l I	   None
	1	Jan-Dec 		l		 	None	 	None
151:	i	! 	i	i I	i	! 	i	! 	i
Midway	D	į	i	İ	i	İ	İ	İ	į
	Ī	Jan-Dec					None		None
		I				l	I	l	
152:		!	!	ļ	!		!		
Midway, moist	D	!	!	ļ	!	l			
		Jan-Dec				 	None		None
153:	I	I I	1	l I		l I	 	l I	l I
Midway	·lp	! !		l I		 	İ	 	i i
•	i	Jan-Dec	i		i		None		None
	İ	İ	İ		İ		İ	I	İ
Razor	· C		1	l	1			l	I
	1	Jan-Dec					None		None
154	1		1	l	[				I
154:	   D	 	I	l I		 	 	 	I I
Midway, moist	ע ו	  Jan-Dec		 	 	l I	   None	l I	   None
	i		i	İ	i			i I	
			•			'	•	'	•

Table 21.--Water Features--Continued

	1		Water	table		Ponding		Floo	ding
Map symbol and soil name	Hydro-  logic  group	Month   	Upper   limit 	Lower   limit 	Surface    water   depth	Duration	Frequency     	Duration	Frequency
	<u> </u>	 	   Ft	   Ft	Ft		l		<u> </u>
	į	į	į	į	į		i		į
154: Razor, moist	l Ic	 		 			 		
Razor, moisc		  Jan-Dec		 			None		None
155:	 	 	 	 	 		 		 
Midway	D		!	ļ .	!!!				
	 	Jan-Dec 	 	 			None		None
Rock outcrop	D	İ	į	į	į į		İ		į
	 	Jan-Dec 	 	 	 		None		None
156:	į	į	į	į	į į		į		į
Midway, moist	D	  Jan-Dec	 	 			   None		   None
	i	 		 			140116		None
Rock outcrop, moist	D	ĺ	İ	İ	İ		İ		İ
	 	Jan-Dec 	 	 			None		None
157:	i	İ	i	i	i i				i
Nunn	C								
		Jan-Dec 	 	 			None		None
158:	i	İ	i	i	i i		i i		i
Nunn	C	 		l					
	i	Jan-Dec 	 	 			None		None
Sampson, rarely flooded	В	İ	i	į	i i		j i	İ	i
	:	April					None		Rare
	:	May  June	 	 	 		None None		Rare Rare
	:	July					None		Rare
	:	August	i		i i		None		Rare
	i	September	i	i	i i		None		Rare
159:		 		 			 		
Nunn, dry	C	! 	i I	i I			 		 
	İ	Jan-Dec	i	i	i i		None		None
Compan dus noncles									
Sampson, dry, rarely flooded	   B	 	 	l I			 		 
	!	May	i		i i		None		Rare
	i	June	i	i	i i		None		Rare
		July	j	i	j j		None		Rare
	ļ	August					None		Rare
160:	1	 	 	l I	 		 		 
Olnest	в	İ	i	i	i i		i i		i
	1	Jan-Dec					None		None
161:	1	 	 	 			 		 
Olnest	   B	i I	İ	! 			i i		i
	i	Jan-Dec	i	i	i i		None		None
100.				ļ					[
162: Olnest	   B	 	I I	I I			 		 
· · · · · ·		Jan-Dec	i	i	i i		None		None
	ļ.	ļ	ļ.	ļ.	ļ i		ļ i		Į.
163: Olnest	   B	 	I	l I			 		 
	-	  Jan-Dec					None		None
	i	i	i	i	i i		i		i

Table 21.--Water Features--Continued

			Water	table		Ponding		Floo	ding
	Hydro-  logic  group 	Month     	Upper   limit 	•	Surface   water   depth	Duration   	Frequency     	Duration     	Frequency     
	İ	l	Ft	Ft	Ft		İ	l	
164: Olney	:	      Jan-Dec 	     	     		   	       None	 	       None 
165: Olney		    Jan-Dec 	     	     	 	   	     None 	     	     None 
166: Olney	   B 	    Jan-Dec 	   	     	   		     None	   	     None
167: Olney	   B 	      Jan-Dec 	     	     	       		     None 	     	     None
168: Olney	   B 	    Jan-Dec 	     	i     	 	   	     None	   	     None
Midway	D 	    Jan-Dec 	i   	i   	i     		     None 	   	   None 
169: Otero	   B 	    Jan-Dec 	     	i     	i 	   	     None 	 	     None
170: Oterodry	:	    Jan-Dec 	     	     	    	   	     None 	 	     None
171: Oterodry		    Jan-Dec 	     	     	    	   	     None 	   	     None
172: Platner	c 	      Jan-Dec 	;     	   	 	   	     None	   	     None
173: Platner	   c 	      Jan-Dec	   	   	   		     None	 	     None
Ascalon	:	    Jan-Dec 	     	     	 	 	     None 	   	     None 
174: Pleasant, rarely ponded	i I	  April  May	     0.0   0.0	>6.0	    0.0-2.0   0.0-2.0		   Rare   Rare	     	None   None
	į Į	June  July  August  September 	0.0   0.0   0.0 	>6.0	0.0-2.0   0.0-2.0   0.0-2.0   0.0-2.0		Rare   Rare   Rare   Rare	     	None None None None
175: Rago, rarely flooded	İ	    April  May	     	   	 	 	     None   None	     	     Rare   Rare
	i I	June  July	 	 	 	 	None None	 	Rare Rare
		August  September 	   	   	     	   	None   None 	   	Rare   Rare 

Table 21.--Water Features--Continued

	I .	l	_ Water		<u>.                                    </u>	Ponding			oding
Map symbol	Hydro-	Month	Upper			Duration	Frequency	Duration	Frequenc
and soil name	logic		limit	limit	water				
	group	 			depth				1
	I	l	Ft	Ft	Ft		l I		<u> </u>
	i	! 		10	10		i i		
76:	i	İ	i i		i i		i i		i
Rago, dry, rarely flooded-	C	ĺ	į į		į į		i i		İ
	1	May					None		Rare
	:	June					None		Rare
	:	July					None		Rare
		August					None		Rare
.77:	-	l I			 		 		1
,,. Razor	l c	! !							
	:	Jan-Dec	i i		i i		None		None
	i	İ	i i		i i				
78:	i	İ	i i		i i		i i		i
Razor, moist	C	I							
	1	Jan-Dec					None		None
	!	!							
79:									!
Sampson, rarely flooded	:								 
	:	April  May	 				None   None		Rare
		May   June					None		Rare
	:	July					None		Rare
		August	i i		i i		None		Rare
	i	September	i i		i i		None		Rare
	İ	ĺ	į į		į į		i i		İ
.80:	1	I							1
Sampson, dry, rarely		I							1
flooded	:	!							
	:	May					None		Rare
	:	June					None		Rare
	:	July  August			 		None   None		Rare
	1	August 					None		Kale
.81:	i	İ			i i		i i		
Satanta	в	İ	i i		i i		i i		i
	i	Jan-Dec	i i		i i		None		None
	İ	ĺ	į į		į į		i i		İ
.82:	1	I							1
Satanta, dry	В	I							1
	!	Jan-Dec					None		None
	!						! !		
83:									
Seldom, rarely flooded		  March	0.5-2.0		 		   None		None
			0.5-2.0				None		Rare
		May	0.5-2.0				None		Rare
			0.5-2.0		i i		None		Rare
		July	0.5-2.0		i i		None		Rare
	İ	August	i i		i i		None		Rare
		September					None		Rare
84:	!	[					 :		1
Shingle	D								
	!	Jan-Dec					None		None
Midway	   D	l I			1				
Midway	:	  Jan-Dec					   None		None
	i			<b>_</b>		<b>_</b>	1011G	<b>-</b>	1 140116
85:	i	İ	i i		i :		. !   !		i
	i -5	i	;		i i		. '		i
Shingle, moist	D	1	'				'		1

Table 21.--Water Features--Continued

			Water	table		Ponding		Floo	ding
Map symbol	Hydro-	Month	Upper	Lower	Surface	Duration	Frequency	Duration	Frequency
and soil name	logic	I	limit	limit	water	l	l		l
	group				depth				
	 	l	Ft	   Ft	Ft	<u> </u>	l	<u> </u>	<u> </u> 
105					į į				
185: Midway, moist	l I D	 	 	l I		] ]	l I	 	 
midway, moist	l D	  Jan-Dec	 	l I	 	 	   None	l I	   None
	i		İ	İ	i i			' 	
186:	ļ.		l	ļ			ļ	l	l
Sundance	B 	  Jan-Dec	 	l I	 	 	   None	l I	   None
	i			İ			110110	 	110110
187:	ļ.		l	ļ			ļ	l	l
Table Mountain, rarely									
flooded			1	  -			   None	 	l Dama
	•	April  May	 	 	 	 	None None	 	Rare Rare
	•	may   June		 		 	None	 	Rare
	•	July		l			None	 	Rare
	•	August		 			None		Rare
	1	September		l			None	 	Rare
	i		i	! 			l None	! 	l Kare
188:	i	i	i	İ	i i		i	i I	i I
Travessilla	D	i	i	İ	i i	İ	i	İ	İ
	i	Jan-Dec	i	i	i i		None		None
	i	İ	İ	İ	i i	İ	İ	i İ	İ
Rock outcrop	D	I					l		l
	İ	Jan-Dec					None		None
		l					l		l
189:									
Truckton	В	!	!		! !		!		
	!	Jan-Dec					None		None
	!						<u> </u>		
190:				 					
Truckton	B	l Tan Dag	1	l I		l I	   None	 	   None
		Jan-Dec					None		None
191:	1	I I	1	l I			! !	 	I I
Truckton, dry	I   в	! !	<u> </u>	! 			i i	! 	! 
1140110011, 417	-	Jan-Dec	i		i i		None		None
	i		i	İ	i i		l	i I	
192:	i	i	i	İ	i i	İ	İ	İ	İ
Truckton, dry	В.	İ	İ	İ	i i	İ	İ	i İ	İ
	į	Jan-Dec	j	i	j j		None		None
	ĺ	ĺ	İ	ĺ	į į		ĺ	l	l
193:		I				l	l		l
Valent	A						l		l
		Jan-Dec					None		None
		l					l		l
194:									
Valent	A								
	!	Jan-Dec					None		None
			!		! !		!		ļ
Bijou	В		!		! !				
	1	Jan-Dec					None		None
195:	!	l I	 	l I		l I	l I	l I	l I
Valent	   A	I I		l I		l I	l I	l I	l I
varence	<del>^</del>	Jan-Dec	 	! 	 	 	None	 	None
	i		i	i I		 	110116	 	1.0116
Vona	I   в	' 	i	İ		! 	<u> </u>	i I	i I
-	 İ	Jan-Dec		 			None		None
	į	j	į	İ	j i		İ	İ	İ
196:	Ì	İ	Ì		į į			I	İ
Valent	A			l	I i		l	l	l
		Jan-Dec					None		None
		l					l		l

Table 21.--Water Features--Continued

		I	Water	table		Ponding		Floo	ding
Map symbol and soil name	Hydro-  logic  group	Month     		Lower			Frequency   	•	Frequency
		l	Ft	Ft	Ft		l	 	 
196: Vonid	     B 	      Jan-Dec 	     	     		   	       None	     	       None
197: Vona	   B 	    Jan-Dec	i i I I		i   		     None	 	     None
198: Vona	     B 	      Jan-Dec		   	     		       None	     	     None
199: Vona	     B 	      Jan-Dec				     	       None	     	       None
200: Vona	     B 	      Jan-Dec			 	 	       None	     	       None
Karval	   A 	    Jan-Dec 	       	   		   	     None	   	     None
Midway	D   	    Jan-Dec 	 	 	   	   	     None 	   	     None 
201: Vona	   B 	    Jan-Dec		   	   	   	     None	 	     None
Midway, moist	D   	    Jan-Dec 	 	 	   	   	     None 	   	     None 
202: Vona	   B 	    Jan-Dec 	       	   	 	   	     None	   	     None
Seldom	     	April  May  June	0.5-2.0  0.5-2.0  0.5-2.0  0.5-2.0  0.5-2.0	>6.0   >6.0   >6.0	         	     	None   None   None   None   None	     	None   None   None   None
203: Vonid	i I	        Jan-Dec			 		None	 	None
204: Vonid	     B 	      Jan-Dec 	 		     		       None 	     	       None
205: Vonid	     B 	      Jan-Dec 	 		   		     None	   	     None
206: Vonid	     B 	      Jan-Dec	 		   		       None	   	     None
Karval	   A   	    Jan-Dec 		   	       	   	     None 	 	     None 

Table 21.--Water Features--Continued

			Water	table		Ponding		Floo	dina
Map symbol	  Hydro-	Month	Upper		Surface		Frequency	•	Frequency
and soil name	logic	l Monen	limit			Daracion	rrequency	Daracion	Frequency
and boll name	group	i I			depth		İ	İ	İ
		i	i				İ	İ	İ
	i	İ	Ft	Ft	Ft		İ	İ	İ
	i	į	i i		i i		İ	İ	İ
206:	İ	ĺ	į į		į į		ĺ	ĺ	ĺ
Midway	D	I					l		l
	1	Jan-Dec					None		None
		I					l	I	l
207:							l		
Vonid	B	!					!		<u> </u>
	!	Jan-Dec					None		None
35 dans									
Midway	D	l Ton Dog					   None	 	   None
	1	Jan-Dec					None		None
208:	1	! !	1				! !	 	l I
Vonid	   B	! !			i i		i	i	! !
	i -	Jan-Dec	i i		i i		None	i	None
	i	I	i i		i i		İ	i	
Seldom	, D	i	i i		i i		İ	i	İ
	i	March	0.5-2.0	>6.0	i i		None	i	None
	İ	April	0.5-2.0	>6.0	i i		None	i	None
		May	0.5-2.0	>6.0			None		None
		June	0.5-2.0	>6.0			None		None
		July	0.5-2.0	>6.0			None		None
	1	I					l		
209:	!	!					!		<u> </u>
Wages	B				!!!				
	!	Jan-Dec					None		None
210:	1	 					 	 	 
Wages	   B	! !	1				! !	 	l I
nages	1 2	  Jan-Dec			 		   None	! 	None
	i		i		i i			İ	1
211:	i	İ	i		i i		İ	İ	İ
Wages, dry	В	i	i i		i i		İ	i	İ
	İ	Jan-Dec	j j		i i		None	i	None
		I					l		
212:									
Wages	В						l		
	!	Jan-Dec					None		None
_	!		!!!		!!!		!		
Karval	A				!!!				ļ 
	1	Jan-Dec					None		None
213:	!	l I					l I	l I	l I
Weld	C	! 		 			! 	i I	ı İ
NCIU		Jan-Dec	i i		i i		None		None
	i		i		i i			İ	l
214:	i	İ	į į		į i		İ	İ	İ
Weld, dry	C	İ	i i		i i		İ	İ	İ
		Jan-Dec					None		None
	1	I					l		l
215:		I					l	I	l
Wiley	B	I					l		
	!	Jan-Dec					None	ļ	None
									!
216:					<u> </u>		l		
Wiley	B	Ton D					Na	1	l Me
	I	Jan-Dec					None		None
217:	I	 		 			 	! 	I I
Wilid	   B	! 		 			i I	i	İ
-	i i	Jan-Dec	i i		i i		None		None
	İ	İ	į į		i i			İ	İ

Table 21.--Water Features--Continued

			Water	table		Ponding	ſ	Floo	ding
Map symbol	Hydro-	Month	Upper	Lower	Surface	Duration	Frequency	Duration	Frequency
and soil name	logic	1	limit	limit	water		1		
	group	1			depth		1		
	1	I	Ft	Ft	Ft		1		
		1					1		
218:							1		
Water							1		
	I	Jan-Dec					None		None
							1		
219:							1		
Gravel pits	A						1		
		Jan-Dec					None		None
							1		
220:							1	l	
Access denied							1	l	
		Jan-Dec					None		None
	1		1	I	1		1	l	1

Table 22.--Classification of the Soils

Soil name	Family or higher taxonomic class
Apishapa	Fine, smectitic, calcareous, mesic Vertic Fluvaquents
	Fine, smectitic, mesic Vertic Natrargids
Ascalon	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
Bacid	Fine, smectitic, mesic Ustic Haplargids
	Sandy, mixed, mesic Ustic Torrifluvents
Bijou	Coarse-loamy, mixed, superactive, mesic Ustic Haplargids
Blakeland	Sandy, mixed, mesic Torriorthentic Haplustolls
Bresser	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
Campo	Fine, smectitic, mesic Vertic Paleargids
Canyon	Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
Colby	Fine-silty, mixed, superactive, calcareous, mesic Aridic Ustorthents
	Fine-loamy, mixed, superactive, mesic Ustic Natrargids
	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Fort Collins	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Glenberg	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Haversid	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Haverson	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents
Haxtun	Fine-loamy, mixed, superactive, mesic Pachic Argiustolls
Karval	Mixed, mesic Ustic Torripsamments
Keith	Fine-silty, mixed, superactive, mesic Aridic Argiustolls
Kim	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Kimst	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Las Animas	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Fluvaquents
Limon	Fine, smectitic, calcareous, mesic Ustertic Torriorthents
Manzanola	Fine, smectitic, mesic Ustic Haplargids
Manzanst	Fine, smectitic, mesic Aridic Haplustalfs
Midway	Clayey, smectitic, calcareous, mesic, shallow Ustic Torriorthents
Nunn	Fine, smectitic, mesic Aridic Argiustolls
Olnest	Fine-loamy, mixed, superactive, mesic Aridic Haplustalfs
Olney	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Otero	Coarse-loamy, mixed, superactive, calcareous, mesic Aridic Ustorthents
Oterodry	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Platner	Fine, smectitic, mesic Aridic Paleustolls
Pleasant	Fine, smectitic, mesic Torrertic Argiustolls
Rago	Fine, smectitic, mesic Pachic Argiustolls
Razor	Fine, smectitic, mesic Ustertic Haplocambids
Sampson	Fine-loamy, mixed, superactive, mesic Pachic Argiustolls
Satanta	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
	Coarse-loamy, mixed, superactive, mesic Aeric Calciaquolls
	Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
	Fine-loamy, mixed, superactive, mesic Pachic Haplustolls
	Loamy, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents
	Coarse-loamy, mixed, superactive, mesic Aridic Argiustolls
	Mixed, mesic Ustic Torripsamments
	Coarse-loamy, mixed, superactive, mesic Aridic Haplustalfs
	Coarse-loamy, mixed, superactive, mesic Ustic Calciargids
	Fine-loamy, mixed, superactive, mesic Aridic Argiustolls
	Fine, smectitic, mesic Aridic Argiustolls
	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
=	Fine-silty, mixed, superactive, mesic Ustic Haplargids
	,